THE

Horticulturist,

and

JOURNAL OF RURAL ART AND RURAL TASTE.

The State and Prospects of Horticulture.

A RETROSPECTIVE glance over the journey we have traveled, is often both instructive and encouraging. We not only learn what we have really accomplished, but we are better able to overcome the obstacles that lie in our onward way, by reviewing the difficulties already overcome.

The progress of the last five years in Horticulture, has been a remarkable one in the United States. The rapid increase of population, and the accumulation of capital, has very naturally led to the multiplication of private gardens and country seats, and the planting of orchards and market gardens, to an enormous extent. The facility with which every man may acquire land in this country, naturally leads to the formation of separate and independent homes, and the number of those who are in some degree interested in the culture of the soil is thus every day being added to. The very fact, however, that a large proportion of these little homes are *new* places, and that the expense of building and establishing them is considerable, prevents their owners from doing much more for the first few years, than to secure the more useful and necessary features of the establishment. Hence, the ornamental still appears neglected in our country homes and gardens, generally, as compared with those of the more civilized countries abroad. The shrubs, and flowers, and vines, that embellish almost everywhere, the rural homes of England, are as yet only rarely seen in this country—though in all the older sections of the Union the taste for ornamental gardening is developing itself anew every day. On the other hand, the great facility with which excellent fruits and vegetables are grown in this climate, as compared with the north of Europe, makes our gardens compare most favorably with theirs in respect to these two points. The tables of the people of the United States are more abundantly supplied with peaches and melons, than those of the wealthiest classes abroad—and the display of culinary vegetables of the north of Europe, which is almost confined to the potatoes, peas, French beans, and cauliflowers, makes but a sorry comparison with the

abundant bill of fare within the daily reach of all Americans. The traveller abroad from this side of the Atlantic, learns to value the tomatoes, Indian corn, Lima beans, egg-plants, okra, sweet potatoes, and many other half-tropical products, which the bright sun of his own land offers him in such abundance, with a new relish—and putting these and the delicious fruits, which are so cheaply and abundantly produced, into the scale against the smooth lawns and the deep verdure of Great Britain, he is more than consoled for the superiority of the latter country in these finer elements of mere embellishment.

In the useful branches of gardening, the last ten years have largely increased the culture of all the fine culinary vegetables, and our markets are now almost everywhere abundantly supplied with them. The tomato, the egg plant, salsify, and okra, from being rarities have become almost universally cultivated. The tomato affords a singular illustration of the fact that an article of food not generally relished at first, if its use is founded in its adaptation to the nature of the climate, may speedily come to be considered indispensable to a whole nation. Fifteen years ago it would have been difficult to find this vegetable for sale in five market towns in America. At the present moment, it is grown almost everywhere, and there are hundreds of acres devoted to its culture for the supply of the New-York market alone. We are certain that no people at the present moment, use so large a variety of fine vegetables as the people of the United States. Their culture is so remarkably easy, and the product so abundant.

We have no means of knowing the precise annual value of the products of the orchards of the United States. The Commissioner of Patents, from the statistics in his possession, estimates it at ten millions of dollars. The planting of orchards and fruit-gardens within the last five years has been more than three times as great as in any previous five years, and as soon as these trees come into bearing, the annual value of their products cannot fall short of twenty-five or thirty millions of dollars. American apples are universally admitted to be the finest in the world, and our pippins and Baldwins have taken their place among the regular exports of the country. In five years more we confidently expect to see our fine late pears taking the same rank, and from the great success which has begun to attend their extensive culture in Western New-York, there can be little doubt that that region will come to be considered the centre of the pear culture of this country.

The improvements of the last few years in fruit tree culture have been very great, and are very easily extended. From having been pursued in the most careless and slovenly manner possible, it is now perhaps the best understood of any branch of horticulture in America. The importance of deep trenching, mulching, a correct system of pruning, and the proper manures, have come to be pretty generally acknowledged, so that our horticultural shows, especially, and the larger markets, to a certain extent, begin to show decided evidences of progress in the art of raising good fruits. Our nurserymen and amateurs, after having made trial of hundreds of highly rated foreign sorts, and found but few of them really valuable, are turning their attention to the propagation and dissemination of those really good, and to the increase of the

number mainly by selections from the numerous good native varieties now springing into existence.

The greatest acquisition to the amateur's fruit garden, within the last few years, has been the *cold vinery*,—a cheap glass structure by the aid of which, without any fire heat, the finest foreign grapes can be fully ripened, almost to the extreme northern parts of the union. These vineries have astonishingly multiplied within the last four years, so that instead of being confined to the gardens of the very wealthy, they are now to be found in the environs of all our larger towns—and a necessary accompaniment to every considerable country place. As a matter of luxury, in fruit gardening, they perhaps afford more satisfaction and enjoyment than any other single feature whatever, and the annual value of the grapes, even to the market-gardener, is a very satisfactory interest on the outlay made in the necessary building.

Now that the point is well settled that the foreign grapes cannot be successfully grown without the aid of glass, our most enterprising experimentalists are busy with the production of new hybrid varieties—the product of a cross between the former and our native varieties—which shall give us fine flavor and adaptation to open air culture, and some results lately made public, would lead us to the belief that the desideratum may soon be attained. In the mean time the native grapes, or at least one variety—the Catawba—has taken its rank—no longer disputed—as a fine wine grape—and the hundreds of acres of vineyards which now line the banks of the Ohio, and the rapid sale of their vintages, show conclusively that we can at least make the finest light wines on this side of the Atlantic.

The progress of the art of gardening in this country, considered merely in a useful point of view, is greatly retarded by the want of some school in which native, or at any rate *naturalised* ability, could be developed. Almost all the practical gardeners in America, are foreigners—generally either Irish, Scotch, or German. They bring with them much experience from the mother country; but much of it is of little value in this climate—partly from its great difference to that of the climate of the north of Europe, and partly because they have only learned the routine of practice, and not the principles of the art. Hence we see every day, gardeners, in this country, where the great want is *shade* from the burning sun—pruning trees and plants *to let the sun in*, just as they have been used to do in a moist and foggy climate, where the trouble is to get sun enough to ripen either the wood or fruit. It may be safely said, that half the disappointments in our nicer operations of gardening, arise from this cause. It is, of course, only to be remedied in the main, by the dissemination of sufficient knowledge among the owners of gardens, to enable them to enforce upon the gardener the absolute necessity of remembering that he *must* change his practice with his country. If, as we have before suggested, some one of our large Horticultural Societies would establish an experimental garden, where emigrant gardeners could labor for a certain time, at a nominal sum, where they could learn the necessary changes demanded in the practice by the change of climate, and then go out for higher wages, with the certificate of the society in their pockets, a new era in practical gardening would soon arise. But as yet the Horticultural Societies expend all their energies on annual

shows, and anniversary dinners—which have, indeed, become almost fatiguing from their sameness—without the ambition to achieve any larger field of usefulness.

In ornamental gardening, many and beautiful are the changes of the last few years. Cottages and villas begin to embroider the country in all directions, and the neighborhood of our three or four largest cities begins to vie with the environs of any of the old world capitals in their lovely surroundings of beautiful gardens and grounds. The old and formal style of design, common until within a few years, is almost displaced by a more natural and graceful style of curved lines, and graceful plantations. The taste for ornamental planting has extended so largely, that much as the nurseries have increased, they are not able to meet the demand for rare trees and shrubs—especially evergreens—so that hundreds of thousands of fine species are annually imported from abroad. Though by no means so favorable a climate for lawns as that of England, ours is a far better one for deciduous trees, and our park and pleasure ground scenery, (if we except evergreens,) is marked even now by a greater variety of foliage than one easily finds in any other temperate climate.

A peculiar feature of what may be called the scenery of ornamental grounds in this country, at the present moment is, as we have before remarked, to be found in our rural cemeteries. They vary in size from a few, to three or four hundred acres, and in character from pretty shrubberies and pleasure grounds, to wild sylvan groves, or superb parks and pleasure grounds—laid out and kept in the highest style of the art of landscape gardening. There is nothing in any part of the world which equals in all respects, at the present moment, Greenwood Cemetery, near New-York—though it has many rivals. We may give some idea of the extent and high keeping of this lovely resting place of the dead, by saying that about three hundred persons were constantly employed in the care, improvement, and preservation of its grounds, this season. The Cemetery of the Evergreens, also near New-York, Mount Auburn at Boston, Laurel Hill at Philadelphia, and the cemeteries of Cincinnati, Albany, Salem, and several others of the larger towns, are scarcely less interesting in many respects—while all have features of interest and beauty peculiar to themselves.

From cemeteries we naturally rise to public parks and gardens. As yet our countrymen have almost entirely over-looked the sanitary value and importance of these breathing places for large cities, or the powerful part which they may be made to play in refining, elevating, and affording enjoyment to the people at large. A more rapid and easy communication with Europe, is, however, beginning to awaken us to a sense of our vast inferiority in this respect, and the inhabitants of our largest cities are beginning to take a lively interest in the appropriation of sufficient space—while space may be obtained, for this beautiful and useful purpose. The government has wisely taken the lead in this movement, by undertaking the improvement, (on a comprehensive plan given by us,) of a large piece of public ground—150 acres or more, lying almost in the heart of Washington. A commencement has been made this season, and we hope the whole may be completed in the course of three or four years. The plan embraces four or five miles of carriage-drive—walks for pedestrians—ponds of water, fountains and statues—picturesque groupings of trees and shrubs, and a complete col-

lection of all the trees that belong to North America. It will, if carried out as it has been undertaken, undoubtedly give a great impetus to the popular taste in landscape-gardening and the culture of ornamental trees; and as the climate of Washington is one peculiarly adapted to this purpose—this national park may be made a sylvan museum such as it would be difficult to equal in beauty and variety in any part of the world.

As a part of the same movement, we must not forget to mention that the city of New-York has been empowered by the State legislature to buy 160 acres of land, admirably situated in the upper part of the city, and improve and embellish it for a public park. A similar feeling is on foot in Philadelphia, where the Gratz estate and the Lemon Hill estate are, we understand, likely to be purchased by the city for this purpose. It is easy to see from these signs of the times, that gardening—both as a practical art and an art of taste—is advancing side by side with the steady and rapid growth of the country—and we congratulate our readers that they live in an age and nation where the whole tendency is so healthful and beautiful, and where man's destiny seems to grow brighter and better every day.

THE TREES OF AMERICA.

BY AN ARBORICULTURIST, PHILADELPHIA.

An arboricultural friend has sent us the following notice of a new edition of Michaux's splendid work on American Forest Trees, and Nuttall's continuation of the same, which we commend to all our readers who would enrich their libraries. Ed.

One of the very best works published on the subject of our beautiful forest trees, a work which, from the accuracy of the engravings, and the beauty of their coloring, has always been found indispensable for the study and identification of specimens, is undoubtedly Michaux's "North American Sylva, or a description of the Forest Trees of the United States, Canada and Nova Scotia." The original edition was published in Paris, and has become extremely rare, and difficult to be obtained; the plates were brought over to this country by the late celebrated patron of science, William Maclure, who, for the benefit of his countrymen, had an edition struck off at New Harmony, Indiana; it was executed, however, so rudely, on such bad paper, and with so many typographical errors, as to be nearly worthless and unsaleable. Knowing the great value of the engravings, Mr. Maclure's brother presented the original copper plates to the late lamented President of the Academy of Sciences at Philadelphia, in whose hands they remained untouched and uninjured several years; himself a devotee of Science, and anxious for its diffusion, he looked round for some person to superintend, and for a publisher to reissue this beautiful and instructive work, in a dress commensurate with its value and utility. A suitable editor was found in Doctor Morton's brother-in-law, Mr. J. Jay Smith, himself a lover and successful planter of these beautiful productions of nature. The plates were retouched where necessary, and this was not often found to be needful; the translation was carefully remoddled, and its numerous errors corrected, and Mr. Smith's son, likewise as a labor of love, undertook the laborious work of superintending the printing, and the still more onerous task of seeing that the coloring was faithfully done by experienced and costly artists. The freshest and best French copies were taken as the main guides, assisted

by living specimens of the leaves and fruits. The result has been the republication in Philadelphia, of this superb work, in three large, handsome octavo volumes; a most valuable gift to the American student it is, and we are happy to be able to say, confidently, that the plates and coloring are in no way inferior to the original, while the text is much improved. The editor, too, has added notes taken from his own extensive experience, and from other writers, and given directions for soil and the cultivation of each species. His notes add value to the work, which has been reduced one-half in price, and thus made accessible to every gentleman's library.

This reduction could never have been made, but for the fact that no charge whatever was made for the use of the plates; had this been the case, MICHAUX would have still been an inaccessible work to the gardener and cultivator; it is now within their reach. The labor necessary to color well so many plates, makes the production of copies a slow process, since few colorists are to be found who will do them justice. Thus far, the sales have been confined to private demand almost entirely; lately, however, a few copies in advance of that demand have been got ready, and are to be procured of Mr. ROBERT P. SMITH, the publisher, Philadelphia, and of Mr. G. P. PUTNAM, New-York.

If praise is to be awarded in no stinted terms to this effort at diffusing accurate information regarding our own trees, we should give further credit for the completion, by the same publisher, of the invaluable continuation of MICHAUX'S great work, by Nuttall, who has taken up the subject where his predecessor left off, and completed our list of American trees in a very handsome and correct manner, with colored lithographic plates, MICHAUX being on copper by the celebrated REDOUTE. NUTTALL'S continuation forms also three superb volumes, embracing the newly discovered trees of California, New Mexico, and Oregon, productions much valued in Europe, and which are now finding their way to our own ornamental plantations. We cannot do better than to transcribe that portion of Mr. SMITH'S preface which alludes to these additional volumes; he says:—

"It was a singular circumstance, and a happy one it has proved for advancing science, that Mr. NUTTALL arrived in this country the very year that the younger MICHAUX left it. From that time he devoted his talents to Botany, and after visiting a large portion of the United States, with an aptitude of observation, a quickness of eye, tact in discrimination, and tenacity of memory, rarely possessed by one man, he published his extended, and most happily executed botanical work, the 'Genera of North American plants.' In 1834 he crossed the Rocky Mountains, and explored the territory of Oregon, and Upper California. With his peculiar qualifications, he prepared the supplement to Michaux's Sylva, in three handsome volumes, corresponding in size with the present, the publication of which, after many delays, was completed in 1849, by my son, in Philadelphia. The two works are now one and homogeneous, the former most highly valued by all lovers of trees, and the latter destined to be equally so, when the fine products of our newly acquired western regions make their way to our gardens and plantations. The frequent references I have made to Mr. NUTTALL'S volumes, will show the reader that his additions to our Sylva, are both extensive and important; inspection will convince him that both authors stand on the highest pedestal of merit."

The editions of both, are very small ones, and may never again appear to be sufficiently remunerative to warrant others; indeed no copies of NUTTALL have yet been prepared for the demand abroad, all that have been ready being required for the home supply; twenty copies, at most, are all that are left. Persons forming their libraries, cannot, therefore, be too early in forwarding their orders. NUTTALL'S work furnishes information not found in any other volumes; it is entirely new, and truly valuable.

STUDIES IN VEGETABLE PHYSIOLOGY—THE ROOT.

BY AUGUSTUS FAHNESTOCK, SYRACUSE, N. Y.

THE third class of plants whose roots are perennial, or live an indefinite number of years, is the largest of the three grand divisions. It comprises all our forest and shade trees, and most of our beautiful flowering plants, and their forms are no less desirable than in the foregoing grand divisions. The most common form of the perennial root is the branching. The roots resemble the branches of a tree, but have no regularity. Some of these branches penetrate the earth to a great depth. Some of them trail horizontally beneath the surface. They do not, as the foregoing, depend upon the stock of the previous year, but annually produce new roots, and form new accumulations, sometimes in separate portions of the root, as in the dahlia or in the Orchis, where, while one or more of such reservoirs is exhausted each year, others are providentially formed for the next years sustenance; and so on from year to year, a portion annually perishing, but the individual plant surviving indefinitely. More commonly, the whole body and main branches of the root are somewhat thickened, or portions of the stem may subserve this purpose, as in all tuberous roots; or the nourishing matter may be widely distributed through the trunk, as in shrubs and trees. Thus far we have only considered the primary root, or that organ which originated in the embyro of the seed at germination. Adventitious buds grow from most stems when placed horizontally on the ground, or buried beneath it, and this is very common to some species; thus the *verbena* is furnished with joints at intervals of several inches each, all of which strike when placed in contact with the soil. "Such roots obey the ordinary tendency of the organ, avoiding the light, and seeking to bury themselves in the soil. Thus when a part of the stem of a plant be cut off at each end, and subjected to the requisite amount of light, heat, and moisture—they will in nine cases out of ten take root. It is in this manner that most green-house shrubs and plants are cultivated. Many plants will emit roots from their leaves. For instance, if the leaf of a Gloxinia or Gesneria be pinned upon the surface of some soil placed in a pot, roots will be seen to issue from the stem in the course of from four to six weeks." To this, as in every other general rule, there are exceptions—as in the case of *aerial roots*. Such plants as the Poison Ivy, (*Rhus toxicodendron,*) Trumpet flower, (*Tecomia radicans,*) &c., emit aerial rootlets from their stems, which fix them to any object which may present itself; in this case the plant draws its nourishment from the soil through its roots, the aerial ones only serving for mechanical support; in this way a plant, in the course of a few years, reaches the tops of the highest trees. There are other plants which produce true aerial roots, which are emitted from the stem, descend to the ground and grow. This phenomena may be observed in our common *Indian corn*, the lower joints of which often send down roots the length of three and four inches; but is more perceptible in the vegetation of a southern climate, where the atmosphere is charged with moisture for a large part of the year. The Pandanus or Screw Pine, forms a good illustration. The roots are emitted from the stem, and fall down, which gives the tree the appearance of having been raised out of the ground. The Banyan also affords another illustration; in this case the roots spring from the horizontal branches, often at a great length from the ground; they then descend, take root, and produce in their turn, plants similar to themselves. This tree grows to an immense size; there is one in the world, which, it is said, is sufficiently large to shelter ten thousand men. The Mangrove is very similar in its habits.

Prof. GRAY says: Its aerial roots spring both from the main trunk, as in the Pandanus,

and from the branches, as in the Banyan. Moreover, this tendency to shoot in the air is shown even in the embryo, which begins to germinate while the pod is yet attached to the parent branch; the radicle, or root end of the embryo, elongating into a slender thread, which often reaches the ground at the height of many yards, before the pod is detached. In this manner the Mangrove forms those immense maritime thickets which abound on low muddy shores within the tropics. There is a class of plants called *Epiphytus* or air plants, which exhibit a further peculiarity. They not only emit roots from every part of their trunks, but during their whole life have no connection with the soil; they are generally found growing upon bark, and the trunks of old trees. The roots adhere to the bark, and fix the plant in a steady position, or else hang loose in the air, from which such plants draw all their nourishment. The parasites are mostly natives of southern regions, such as the orchidaceous plants; many of them adorn our hot-houses, and are rare and interesting objects. Some parasites not only grow upon other plants, but live wholly at their expense, which the epiphytes do not. Parasites may be reduced to two different sorts: first, green parasites, those which have green and proper foliage for respiration and perspiration—and second, those which are destitute of green foliage; they also differ in their degree of parasitism—the great number of them being dependant upon the foster plant for support; but there are a few, such as the *Colutia rosea*, which often take root in the soil, and from thence assimilate a part of their food, and in some cases live and grow independent of their aerial roots. The green parasites are furnished with proper digestive organs of their own, just as in the higher class of flowering plants; they strike their aerial roots through the bark of the plant upon which they grow, and embed themselves in the alburnum, from which they can draw little or no sustenance, except the crude ascending sap, which they must assimilate with their own organs. The Misletoe is always parasitic, being at no time connected with the soil; the seed germinates upon the tree wherever it happens to fall; the germinating root, or the woody mass which it forms resembling the root, penetrates the bark of the foster plant, and forms a close junction apparently, with its young wood, as that of a natural branch. Some species of the Misletoe have no proper green colored foliage, but are of a brown or yellow cast. Pale or colored parasites, such as the Beech drops, strike their roots in the bark of the foster plant, and thence draw their nourishment, already assimilated. Hence they have no use for their proper colored foliage. In some instances, such plants as the Dodder will germinate in the earth, but as soon as they grow large enough they twine around some approximate tree, their aerial rootlets penetrating the epidermis into the bark, and feed upon its nourishment—while its own root dies, and the plant has never any more connection with the soil; thus the plant, like some human ones, steals its nourishment, and requires no proper foliage, for it would not use it if it had it. Such parasites do not live upon all plants, but only upon those which will yield a propitious food. Some, it is said, are restricted to certain species, and others seem to have little or no choice. Their seeds are only germinated when placed in contact with the plant upon which they are to grow. Some parasites may be reduced to a single flower, or flowers, situated immediately upon the foster plant. A truly wonderful instance of this kind is furnished by that vegetable titan, the *Rafflesia arnoldi*, of Summatra. The flower which was first discovered grew upon the stem of a kind of grape-vine; it measured nine feet in circumference, and weighed fifteen pounds. Its color is of light orange, mottled with yellowish white. Some cryptogamous plants, such as the fungi, are parasitic upon languishing vegetables, and some infest living animals; the rest live upon decaying animal and vegetable matter, and are all destitute of clorophyle, (coloring matter.)

AUGUSTUS A. FAHNESTOCK.

RAISING OR HOW TO RAISE THE FINEST STRAWBERRIES.

BY R. G. PARDEE, PALMYRA, N. Y.

The following is *the best* way that I know, of cultivating the strawberry in our favorable soil:

Select, in the early spring, a rich deep mellow, gravelly loam, if possible, in rather low moist ground, with a good exposure to the sun. Then spade it full a spade deep, repeatedly, on the first of every month until July, when the ground will have become thoroughly broken up and mellow, and also the danger of the earth packing and becoming hard, will mainly have past. After breaking up the ground well on the 1st July, and levelling off the soil instead of raising it into beds, then immediately set out the strawberry plants, two in a stool, 18 to 24 inches apart. Then mulch, forthwith, the whole ground, including the walk, with an inch and a-half deep of old tan-bark, saw-dust or well rotted manure; but I would carefully prevent any barn-yard manure, or even ashes, becoming incorporated in the soil previously or at this time. Next I would thoroughly water them, and keep them sufficiently watered to insure a constant and vigorous growth, which is not a task if well mulched. After this, the occasional pulling of a very few weeds, that find their way through the mulching, and a slight coating of leaves and straw on the approach of winter, is all the care I would give them, until the opening of the following spring, when I pursue the following process:

On removing the coating on the opening of spring, I fertilize the plants with a liberal sprinkling of a solution of ¼ lb. each of sulphate of pottassium, glauber salts, and sal soda, and one ounce of muriate ammonia, to eight gallons water, and continue this once in a week or ten days until they blossom, when I give them pure cold water till they ripen, when I discontinue all applications. I do not say my combination of fertilizers cannot be improved, but it proves efficient enough with me until I learn of a better one.

If not couvenient, I do not break up the ground until the 1st July, when I plant out; although I think it better not to allow the ground to be occupied the previous part of the season, and to be frequently stirred. I prefer, all things considered, the 1st to 10th July for planting out, for the reason the soil does not bake so hard as if set out in spring, and at this season I can secure the largest crop next June. If the setting out is delayed till August, I can only depend on half a crop, and only a quarter if delayed till September.

By this plan, it will be seen, I avoid all trouble in forking over the ground in the fall or spring—I do not find it necessary.

Although so many succeed unsatisfactorily in raising strawberries, yet I know of no fruit raised in this climate on which I can, with such confidence, rely for a certain and regular large crop as by this plan, with good varieties—only amateurs who wish to raise remarkably fine fruit may choose to take so much pains as the whole process here laid down involves, yet what is worth doing at all, is generally worth doing well.

I will not presume to say that this plan is perfect, or is the best. Other soils and climate may demand some modification, yet after examining a large number of grounds for years past, and listening to, or reading the mode of procedure of a large number of the most successful cultivators, I have summed them all up, and prefer the above to all others which has come to my knowledge. Every cultivator has his own best way to accomplish the object, and yet, perchance, all have much to learn from the experience or observation of others.

R. G. P.

Palmyra, N. Y., Nov., 1851.

ON THE THEORY OF PRUNING FURIT TREES.

BY LAWRENCE YOUNG, LOUISVILLE, KY.

A. J. DOWNING, Esq.—I have heretofore suggested to you my design of offering through the medium of your columns, to the pomological world, the outline of a rude theory which I have entertained for some years, respecting the existence of two forces or principles in vegetable physiology, and their bearing upon the science of culture, training, and pruning. It has seemed to me that the vague, indistinct, not to say contradictory notions of these forces, to be learned in the books, is a frequent source of injury to the cause of fruit culture at large.

In order to explain the nature of the two forces referred to, and in order to give an example of the manner in which erroneous views of their nature may operate, I shall quote a few authorities setting forth the axiomatic and doctrinal nature of said forces, according to the present state of the science of vegetable physiology.

Four of the best American authors, DOWNING, THOMAS, BARRY and KENRICK, and at least one English writer, LOUDON, agree substantially in setting down to the account of over luxuriance, the cause of unfruitfulness in trees of the orchard or fruit garden—as also in stating that fruitfulness lies in an opposite direction, or at some point towards feebleness not more remote than debility itself. DOWNING asserts that fruitfulness or luxuriance, or rather the causes which lead to their development, are susceptible of being excited, either the one or the other, at the will of the operator, by "difference in the mode of pruning." The others make luxuriant wood growth and fruitfulness two antagonistic extremes, stating in substance that "whatever tends to promote one retards the other." These, and such other of the best authors as I am familiar with, all admit an existence of two tendencies in the condition of a tree, one to fruit-bearing, and one to the making of wood-branches; all agree that fruitfulness lies in an opposite condition from wood formation, but in terms so general that the inexperienced are left to infer that the farther you recede from luxuriance, the nearer one approaches the point of fruitfulness. In fine, high feeeding, in one form or other, is set down as the great agent for exciting the system of wood-buds and starvation, for bringing into activity the fruit bud. Luxuriance and unfruitfulness are used as synonymous terms, and by inference, starvation and fruitfulness seem also to have the same import. My theory of these forces supposes them also to exist in a state of antagonism—that the seat of the wood system is in the trunk, branches and roots, between which there is evidence of a strong sympathy, and of a continued action and reaction—that the fruit-bearing system has no sympathy with the roots, but feeds upon the juices of circulation in the branches, as parasitical plants—that fruit spurs once developed never change their nature, except in consequence of some act of violence, and may multiply like parasitical plants, until their demand upon the juices of circulation even starve out the wood-buds, and finally induce the death of the tree. Fruitfulness I consider a state of normal health in a tree large enough to bear. I think it exhibits the existence of these two forces in a state of equilibrium, and a departure therefrom, towards either extreme—towards luxuriance or feebleness, is a disturbance of the balance of power—the beginning of a state of disease, the nature of which will entirely depend upon the character of the force in predominance, and must call for remedies in accordance; that is, a tree too luxuriant for fruitfulness will need depletions, while a starving subject would want stimulants and tonics.

In giving an example of the manner in which erroneous notions of these forces affect the cultivator, I will suppose one has, as a subject, a tree unfruitful from too great luxuriance. Suppose he should undertake to cure this defect by lessening the number of rootlets catering for the woody system, by root pruning, would it not be absurd philosophy and a waste of time to fill up with rich manures, a trench made for amputating the roots thus enabling the surviving rootlets to gather from a crib, food in quantities, perhaps, equal to the efforts of the whole system from leaner pastures before amputation.

Again, a tree neither too feeble nor too luxuriant for fruit-bearing, ought not to be pruned unless for symmetry's sake—whilst one needing the knife ought to be considered either as too vigorous or too feeble. How confused, then, must the science of pruning be, when its best expounders direct an annual indiscriminate pruning of trees under all conditions, when the admitted effect of that particular mode of pruning too, is to stimulate but one of these forces. Yet such cases are in the books, and one of these cases I will refer to, because the distinguished author who exercises, and I think justly exercises a wide-spread influence over many admiring friends, has in the south and west led some of them into error and disappointment. I would not be understood in this as endeavoring to show off the gentleman's fallibility. I willingly acknowledge myself his debtor for much, both of pleasure and instruction. In fact, I have thought that none other than an inspired member of Pomona's priesthood could have given readings of the laws of nature so generally true to her text-book, as those rendered by the accomplished author of the Fruits and Fruit Trees of America, and I have thought moreover, that high latitude and New-Jersey sand betrayed him into the error alluded to, which is taking the peach tree at three years old, and in March or April of every year during life, shortening-in the branches.

In any cultivated orchard of the Indian corn district, west or south, this treatment is erroneous. It would be wrong, because in such location the tendency of the tree is, at that age, to over luxuriance, and in that case, cutting off the branches to make it less so, would be as though a farmer should attempt to starve out his briars by cutting off their heads in March, when the roots had before them a years supply, instead of the fated August—when they would be in the midst of famine; it would be as though he should attempt to reduce the condition of grazing cattle, by diminishing the number of his herds, or increasing the extent of his fields, or the luxuriance of their verdure.

Without much confidence that my remarks will have much interest, other than that of novelty, I propose to consider the appreciable evidences and outward marks, peculiar to the wood system and the fruit bearing, respectively.

Next to class the rules for growing, training, and pruning in accordance therewith; reviewing also their aptitude, claiming as I do, to be a great admirer of the true and the beautiful in nature—next to the pleasure of weaving fine theories myself, is that of seeing them stript of their flimsiness by others. I should therefore like to be set right in any error perpetrated in the course of these remarks, by any of your numerous correspondents, who shall perceive an error, and at the same time have patience and inclination for the work.

LAWRENCE YOUNG.

Louisville, Ky., Oct., 1851.

REMARKS.—Mr. YOUNG appears to have singularly misunderstood the aim of the shortening-in system of pruning, which we have labored to introduce in this country. The main object of this mode of pruning, is to *prevent the tree from enfeebling itself*—partly by regulating the annual crop and partly by forcing it to push out several luxuriant shoots, where it would otherwise only have made one. To quote the precise language of our work on Fruit Trees—" while we have thus secured against the prevalent evil, an over

crop, we have also provided for the full nourishment of the present year's fruit, *and induced a supply of fruit-bearing shoots throughout the tree, for the next season.*"—p. 459.

It is straining an inference to say that high feeding is the only course for making wood, and starvation for making fruit, pointed out by the best writers. The production of fruit-buds depends upon the formation and deposit of that *organizable matter* which nature directs especially to this end, and not to the end of growth, and though starvation often forces nature, by cutting off rapid growth, to turn all the accumulated energy of the tree into the production of organizable matter, such is not the operation of secretions in the normal and healthy condition of the tree. That condition lies, as Mr. YOUNG truly says, and as we think all sound writers will be found also to say, in an equilibrium of the vital action of the tree. The most skilful pruners of fruit trees in the world, are the French, and whoever has seen the best pyramidal pruned pear trees in France, must have been struck by the perfect balance between healthy growth and productiveness maintained by the admirable system of pruning practiced on those trees. ED.

DESCRIPTION AND CULTURE OF EUROPEAN STRAWBERRIES.

BY JOHN SAUL, WASHINGTON, D. C.

HAVING had considerable experience in the cultivation of all the leading varieties of strawberries in England, I have thought that a few remarks may be useful as well as interesting to the cultivators of this excellent fruit in this country. In my list will be found *none but what I have grown and tested myself.* Climate, soil, and other circumstances effect all fruits more or less, as regards growth, productiveness and flavor, and none more so than the strawberry. I believe it is generally acknowledged that European strawberries do not succeed in this country so well as the American garden seedling varieties—to this there may be some exceptions—and, *vice versa*, the American varieties will not adapt themselves to the murky atmosphere of England, as the natives born of the soil do; as regards size, productiveness, and flavor, they want the bright light and genial heat of their native land. This I had seen conclusively proved by parties on the other side of the water, who had imported the best American varieties; in a word they were miserable, when compared to the splendid kinds they already possessed. I fear it will prove the same with many of the finest English varieties here; they will probably be pronounced *rubbish*—and justly so in this soil and climate—yet I think more of the good English strawberries will be found to succeed in America, than of the American varieties in England. Perhaps I shall be asked why? My reason simply is, in England the great drawback and the great difficulty consists in want of the light and heat which the American fruits require, and which no cultivation, however good, can give them in the open air. Not so in this country; here is plenty of light and heat, and careful cultivation can assist them with other little essentials. However, some may be found useful, while many others deserve a trial.

Of late, many fine varieties have been raised both in this country and England, yet a wide field is open for the raisers of seedlings yet. We have the Chili, a very large but tender variety; why not cross this with some of the hardy high flavored varieties. MYATT, the great English strawberry grower, evidently had this before him when he originated his Eleanor and Mammoth. To all appearance they are crosses from the Chili with some of the Pines. Again, we have the high flavor of the Alpine; why not combine it with the size of a Chili or Pine. Mr. SAUNDERS aimed at this when he produced his Giant Alpine.

Could not the peculiar flavor of the Hautboy be blended with some of the larger kinds I have named. Yet I know not of one attempt to cross this strawberry with any of the other kinds. A little consideration will suggest many other crosses which would be equally valuable—indeed I know of no fruit more capable of improvement than this, fine though it be already.

There are many small and delicious flavored sorts, whose good qualities may be combined with the large size, productiveness, and hardiness of others. This present time some two or three English growers are before the public with new varieties. MYATT advertises one which he names "Cinquefolia," the distinguishing character being its having five leaves on a stalk; if this strawberry is first rate as regards flavor, size and productiveness, it may be useful; on these will its merits depend, as strawberry eaters will care but little whether the leaves which nourished their delicious fruit, had three leaflets or five. These remarks are not penned to lessen the value of Mr. MYATT's fruit, I being well aware there is not a more respectable man in the trade in England, than Mr. MYATT; the strawberries and rhubarb which he has already sent out, are the best guarantee for the future. But I do object to the legion of varieties of all sorts of fruits, and florist's flowers too, which are continually forced upon the public notice; flowers which frequently are but a repetition of older varieties, or differ so little that an ordinary observer could not distinguish them; and fruits, which, if they differ from older ones, in too many instances they are far from equaling them. By all means let seedlings be raised, let new varieties be brought into culture—but as we do the latter let us be convinced that they are superior to older ones—if not superior, most certainly equal, and possessed of other good sterling qualities to recommend them.

In England they know of no such distinction as "*staminates*" and "*pistillates.*" There they are all hermaphrodites, if, perhaps, we except the old Hautboys, which are very subject to become sterile. In forcing strawberries, when they are first introduced into too violent a heat, sterility will be the consequence. Why this difference between the strawberries of this country and England? It cannot be over luxuriance of growth, as in England they receive the very highest cultivation; we must look for another cause, which I suspect we shall find in the *climate*. Upon this point, the following excellent remarks from Dr. LINDLEY, will not be out of place:

"Those who would understand the philosophy of strawberry forcing, should begin at the beginning, and first determine what it is they have to deal with. This can only be ascertained by examining the young flower buds as they exist in the plant, when it makes its first move towards growth. At that time they are collections of tiny scales, placed over a small spongy center. By degrees they take on the forms of calyx, corolla, stamens, and pistil. They form successively in the order in which they are named, the calyx first, the pistil last. The calyx and corolla are the most simple, grow the quickest, and most easily bear to be hastened; stamens require more time for growth; the pistil most of all. When high temperature night and day, with abundance of moisture, and as much light as February yields, are suddenly applied to the strawberry, it is compelled to grow, the predetermined parts advance, and, obedient to the influences which their nature cannot disregard, they by degrees unfold; but how? The oldest parts, namely, the calyx and corolla, simple in their structure, and already advanced in their formation, suffer no injury, but appear in their usual state, arraying the blossom in gay apparel of white and green. The next, however, the stamens, having less time to form, acquire perhaps their yellow color, but are powerless for their allotted office; while the pistil, the most complicated of all the parts, that which demands the longest period for its perfect formation, but which is the

latest that the flower produces, and which is to become the fruit, is a mere tuft of abortions, incapable of quickening, and shrivelling into pitch-black threads as soon as it is fully in contact with the air." How true is every word of this! I have, myself, on many occasions, seen strawberries of the most productive kinds, grown in pots, and well established, on being introduced too suddenly into heat early in spring, say from the middle of January to the end of February, become so sterile, that on a couple of hundred of pots there could not have been gathered a dozen of strawberries; the reader must bear in mind that at that period of the year in England, there is very little sun-light, and when this is added to heat, with proportionate moisture, and little air, the cultivator has a magnificent crop of sterile strawberry blooms! Let plants of the same growth and variety be put into the forcing house from the beginning to the end of March, keep them near the glass, with a low temperature to start with, and abundance of air—as the spring is now advancing, even in that dull atmosphere, there is a little more sun-light—a large crop of fine fruit will be the reward of such judicious treatment. Again, the same variety grown in the open air in that country, will produce a splendid crop. This experience, however, only bears out the sensible and philosophic remarks of Dr. LINDLEY, and which, to my mind, is conclusive as to the cause of sterility in strawberries—namely, climate. Strawberries in England, we will suppose, are in the fall, strong and well established, having well formed and well ripened crowns; winter sets in, but it is mild in comparison with its American counterpart; no protection is required by the plants, their foliage is scarcely injured; they remain generally torpid until about the middle of February; the days are beginning to lengthen, and occasionally there is a little sun; the plant, obedient to the call of nature, moves a trifle, though but a trifle, up to the beginning of March; all through March the same proceeds slowly; April generally comes in warmer, with refreshing showers, and from the third week in this month, until about the end of the first week in May, may be considered their blooming season. May is generally a fine month, but not so warm as an American one, the thermometer ranging from 50° to 60° in the shade by day, and sinking at night as low as 40° to 45°; of course, I now speak generally. I have known sharp white frosts as late as the 13th and 14th of the month, and proportionably cold by day—by the end of May the early varieties will be ripening. By taking a retrospective glance, it will be seen that in England their season of growth is long, moderately cool, though never very cold at night—moderately warm by day, the strawberries having time to form the various parts of fructification so well described by Dr. LINDLEY.

Turning to the American seasons, what shall we find? A long, severe winter, during which time our strawberries are reposing beneath a covering of litter and snow—so far so well; spring sets in suddenly warm, and, it may be, dry, and strawberries which were so dormant but a short time before, are quickly in foliage and flower, producing staminates in abundance, and caused by what? the sudden transition from cold to heat, as in the instance of the forced strawberry plants, and were it not for the bright light and sun, the crop would be as scanty as in an English forcing-house, in Dr. LINDLEY's words—"the oldest parts, namely the calyx and corolla, simple in their structure and already advanced in their formation, suffer no injury." "The stamens, having less time to form, acquire perhaps their yellow color, but are powerless for their allotted office; while the pistil, the most complicated of all the parts, that which demands the largest period for its perfect formation, but which is the latest that the flower produces, and which is to become the fruit, is a mere tuft of abortions, incapable of quickening, and shrivelling into pitch-black threads as soon as it is fully in contact with the air." Has not soil, locality, or season much to do with the character which a strawberry assumes? I think so,

and in support of this, I may name Myatt's British Queen, Deptford Pine and others, which in England are hermaphrodites; in this climate they become staminates. Again I shall suppose A, raises a good seedling which he sells out as a perfect or hermaphrodite bloomer, whichever it may be—B purchases, but, to his great disappointment, finds his plants principally to consist of staminates; he now accuses A of having deceived him as to the real character of the strawberry; when the error lays with himself in planting in too quick or warm a soil or situation, where the sudden transition from the cold of winter to the heat of spring is as sudden as it is warm, and hence the cause of the change.

If soil and situation will cause this change whether more or less, may it not to a considerable extent be counteracted—will not tan-bark, so strongly recommended by Mr. DOWNING as a fertilizer, mulcher, and protection against cold, prove invaluable as a mulcher in early spring—the transition time from winter to spring—keeping the ground cool under the bright beams of a burning sun, allowing the plants to progress more slowly and surely in the formation of the various parts of fructification. Many other ways equally effectual in attaining this desirable end, will suggest themselves to the practical and scientific cultivator.

With this preliminary I proceed to my practical notes on the leading European varieties:

1. *Aberdeen Beehive*—This variety was sent out some two or three years back by a nurseryman near Aberdeen, as an extraordinary new strawberry, for which he modestly charged about 37½ cents, a plant; ten plants came into my hands direct from this *worthy man*, through the post. I had them planted in a well prepared piece of ground, expecting with the returning season to have my eyes dazzled and palate pleased, with the size, beauty, and flavor of this redoubtable variety. Imagine my surprise, when instead of something new and magnificent, I had the "old Grove-end Scarlet," for such it proved to be! Some may suppose there had been an error here, but there was nothing of the sort; every purchaser fared alike—all were deceived—they paid high for the "Old Grove-end Scarlet."

2. *Black Prince, (Cuthill's.)*—Sent out by CUTHILL of Camberwell, London, three years ago; he described it as "a fruit of medium size, very dark colored, well flavored, and a first-rate sort for preserving." Other growers in England considered it as *too acid;* after growing it two years and giving it a fair trial, I have come to the following conclusions: 1st. It is the earliest of all strawberries. 2d. It is a prodigious bearer. 3d. If divested of its bloom in spring, it will bear a pretty good crop in the autumn. 4th. Fruit of medium size, long conical, dark colored; flavor, in dull, cloudy, or wet weather, very acid, but in hot dry weather, middling. 5th. It is an admirable forcer, bearing abundant crops in pots. This variety deserves a trial in this country, it being very early and productive; the bright light and heat of this fine climate may improve its flavor. This is not the old Black Prince of the American nurseries, highly spoken of in Mr. Downing's Fruits, as a variety of first rate quality; the latter variety was sent out from England or at least one under this name, about 12 years ago, but it is now nearly, if not quite gone out of cultivation there, (England.) If my memory is correct it was a fruit of good size, round and very dark color; high flavor.

3. *Carolina, Bath Scarlet or Old Pine.*—Of late this fine old fruit is not much cultivated in England, British Queen and similar varieties having displaced it; still there are those who will not discard their old favorite; it is of the richest flavor, a moderate bearer, and requires the best of culture.

4. *Coles' Prolific.*—Raised by COLES of Wellow, near Bath, England. It is "in the way" of Keen's Seedling and Princess Alice Maud, most probably raised from this paren-

tage; color deeper than that of the latter named variety; largest size, conical, and high flavor.

5. *Coul's Late Scarlet.*—This variety has been out some years. Fruit of medium size, deep colored; flavor good; a moderate bearer; may be called a second class variety.

6. *Cox's Seedling.*—Raised from the Elton Pine, but not as good as that fine variety. Fruit large, light-red, very irregular in shape; flavor pretty good, though a little acid; good bearer and very late; this variety so closely resembles the Elton, that it is not worth cultivating where that can be had.

7. *Downton.*—One of Mr. KNIGHT'S seedlings, a very high flavored strawberry. Fruit medium size, very dark colored, ovate; a moderate bearer, which of late has caused it to be rather neglected in England.

8. *Duncan's Seedling.*—This variety was raised from Keen's Seedling, in the neighborhood of Bristol, England. Like that excellent variety, it is of first rate flavor, large size, dark color and good bearer; it is considerably cultivated in that locality.

9. *Elton Pine.*—In England this is considered their finest late strawberry. Fruit of the largest size, light red color, high flavor, but a little inclined to be acid; ovate, and occasionally cockscomb shaped. There is no variety so extensively grown as this in England, for a late crop; to its other good qualities, it adds that of a good bearer.

10. *Giant Alpine.*—Raised from seed by Mr. SAUNDERS, Tedworth, England, from the old Alpine, crossed evidently by one of the Pines; a person unacquainted with its origin would never suppose it had any of the blood of an Alpine in it; as in foliage and habit it agrees with the Pines. From this union we may expect something fine, but in this instance such is not the case; it neither possesses the fine flavor of the Pine, or peculiar flavor of the Alpine, nor a combination of both; in dull weather it is tasteless, but in warm weather and light warm soils, it is rather better; indeed I have known such circumstances, when the flavor may have been considered good. It is a prodigious bearer, throwing up immense bunches of fruit, which are of a fine rich lake color, globular and medium size. I have noticed this much, as it has been recently sold in England at a high price.

11. *Goliath,* (*Kitley's.*)—This strawberry was brought into notice two or three years since, by the raiser, Mr. J. KITLEY, Bath, England. It is a seedling from British Queen, to all appearance crossed by Elton or Cox's seedling, most probably the latter, as like that variety, it is very irregular in shape and size. As it has been extensively "puffed off," and to my knowledge, immense quantities disposed of at a high price in England, before giving my opinion of its merits, I think I ought to say what opportunities I have had of testing them. In the summer of 1849, (I quote from memory,) Mr. Kitley brought a sample of fruit of this variety to the horticultural establishment to which I was then attached; the fruit was of a rich scarlet color, of large size, (though I had seen British Queens larger,) the flavor was good, though to my palate I had tasted better. A few weeks after this, fifty strong plants were put into my hands by Mr. KITLEY, which he then stated were the first sent out; these I had planted in a well prepared piece of ground—and a good strawberry soil—in the summer of 1850 they bore, and the doubts which I first entertained of this variety, were more than confirmed. Fruit rich scarlet color, very irregular in shape and size, having numbers of small and medium sized fruit with some large ones; and those that were large were most certainly inferior in size to a good British Queen, and many other large strawberries; its name is therefore a misnomer; flavor decidedly inferior to a British Queen, and inclined to be acid; a pretty good bearer. This variety is as tender, and will require as much care in culture as a British Queen—and is, therefore, not worth cultivating where that fine variety will succeed.

12. *Grove End Scarlet.*—An old variety not much cultivated in England of late. Fruit very small, of a light vermillion color, globular, and early. Being an abundant bearer and rather acid, when cultivated in that country, is generally used for preserving.

13. *Hautboy, Fertilized, (Myatt's.)*—This is the most prolific as well as the largest and finest of the Hautboys; it was raised by Myatt the great strawberry grower, and should be grown by all who admire the peculiar and high flavor of this class of strawberries. Fruit medium size, conical, deep purple in the sun, passing into very light purple in the shade, possessing that fine sweet flavor for which they are noted—a pretty good bearer.

14. *Hautboy, Globe.*—Differs from the above in having globular fruit, of smaller size, and less productive; consequently not worth cultivating when better varieties can be had.

15. *Hautboy, Prolific.*—For a long time considered the best in this class, but it must now give place to Myatt's Fertilized, which is a larger fruit and better bearer; in other respects they are precisely identical.

16. *Hooper's Seedling.*—This variety was sent out by Mr. Myatt about the same time as his Globe, Mammoth, &c., made their appearance. It belongs to the same class as Keen's Seedling and Princess Alice Maud, and has the appearance of a seedling from the latter, but the fruit is more globular, darker in color and later in ripening. Fruit of a deep lake approaching to black when ripe, of high flavor, and excellent bearer. Ripening however, as it does, about the same time as British Queen, Myatt's Globe, and other celebrated varieties, it has never been very extensively cultivated.

17. *Keen's Seedling.*—Perhaps at the present day there is no strawberry more generally cultivated in England than this fine old variety; it is considered too tender for this climate, and it requires care in its culture there. Fruit of large size, round, sometime cockscomb shaped, of a fine rich purplish crimson, and the highest flavor, and good bearer and very early. For strawberry forcing this variety is indispensable.

18. *La Liegoise.*—This variety is of French origin and made its appearance in England about three or four years since; in appearance it is nearer allied to the Roseberry than any variety I know. Fruit medium size, of bright scarlet color, good flavor, very prolific, and one of the earliest. These qualities should recommend it to cultivation, and it is worthy of a trial in this country.

19. *Myatt's British Queen.*—In my remarks on Keen's Seedling, I noticed its extensive cultivation in England, and coequal with it is the culture of this superb variety. Difficult it would be to find a garden in England in which strawberries are cultivated that has not this splendid sort. There never has been a variety originated in Britain equal to this. Fruit of the largest size, roundish and slightly conical, rich scarlet color, and the highest flavor, ripens about medium-season, and an excellent bearer. It is also an admirable forcing variety. For its successful culture it requires a deep loamy soil well enriched; in this climate it should be well protected—I have seen great quantities of it killed by cold and wet in the comparatively mild climate of England.

20. *Myatt's Deptford Pine.*—This variety after several years culture, I consider worthless. It is much hardier than British Queen. Fruit light scarlet, medium size, ovate, a good bearer, but very acid, ripens at mid-season. Can this be the same as what is highly spoken of by excellent cultivators? The plants under my cultivation came direct from Myatt.

21. *Myatt's Eleanor.*—The fruit of this variety is of monstrous size, and looks like a cross between Mammoth and British Queen; if not raised from this source it may have been from the same parent on one side as Mammoth, bringing more of the Pine flavor from the other parent. Persons acquainted with the Chili strawberry may observe con-

siderable traces of it in this variety, blended, however, very much with the color, shape, and flavor of the Pine; it is the best attempt I know to combine immense size with flavor. Fruit very large, crimson scarlet, medium season, an excellent cropper; in dull weather this variety becomes very acid, but in clear warm sunny weather it is of first rate flavor. In this fine climate this strawberry should have a trial.

22. *Myatt's Eliza.*—Sent out about the same time as British Queen, but at present little grown in England, being very much inferior to the latter in productiveness, size and flavor. Can the variety so highly praised by Dr. HULL under this name be correct? Fruit little more than medium size, ovate, deep scarlet color, ripens at mid-season, a middling bearer, and most certainly inferior to the Queen in flavor.

23. *Myatt's Globe.*—If British Queen has a rival in England, this is the one; and after that variety this is the best of Mr. MYATT'S Seedlings. In foliage, size, color and flavor, it resembles the Queen, and most probably is a seedling from it. Fruit of the largest size, globular—though slightly elongated—very regular in shape and size, a good bearer, and no strawberry can excel it in flavor. Here again is a variety which should have a liberal trial.

24. *Myatt's Mammoth.*—This variety is useless save for seeding; crossed with some of the higher flavored fruits the progeny may be good, as flavor would be united to size. In this is a great portion of the Chili blood, which should be mixed with the richest Pine. Fruit the largest of all, roundish, crimson in the sun, in the shade nearly white, flavor bad, nearly tasteless, a shy bearer.

25. *Myatt's Prince Albert.*—Made its appearance about the same time as British Queen; at present it is not much cultivated in England, ripening as it does, when most strawberries are in season, and second to many in size and flavor. Fruit medium size, conical, color a purplish crimson, flavor pretty good though not equal to a British Queen; this is exceedingly prolific—I was about to say the most prolific of strawberries.

26. *Myatt's Pine.*—This delicious old fruit is now little cultivated from its great shyness in producing fruit, other more productive sorts having driven it out of culture. Fruit large, bright scarlet and the highest flavor.

27. *Myatt's Prolific.*—Very much in the way of Prince Albert, maturing its fruit about the same time, but of better flavor. Fruit medium size, deep crimson scarlet, conical, rich flavor, and a prodigious bearer.

28. *Princess Alice Maud.*—Raised from Keen's Seedling by Mr. TROLLOPE of Bath, England; throughout that country it has been extensively disseminated and cultivated, yet in no part has it proved as fine as in its native locality, Bath; here, however, there is naturally a good strawberry soil—a deep rich loam—where nearly all varieties acquire the greatest perfection. It is much hardier than Keen's Seedling, and a better *cropper*, though scarcely as good in flavor. Fruit large, round, purplish crimson, very productive, good flavor and early.

29. *Red Alpine.*—This very old European strawberry, is of extremely easy culture, not being particular as to soil or locality, and invariably productive. They are best raised from seeds, which, if sown early in spring, in pans, placed in a little heat to forward them, pricking off into other pans when large enough, and finally into beds in the open air, when of sufficient size, by autumn they will give a good crop, and the following season bear plentifully. They should be renewed in this way frequently. Fruit small, conical, bright scarlet, with peculiar delicate flavor.

30. *White Alpine.*—Requires the same treatment, and is in every respect similar to the red, save color, which is white.

31. *Rostock.*—An old fruit of the Pine class, not much cultivated of late. Fruit large, round, white; middling flavor and good bearer. The color of its fruit appears to have been its chief recommendation.

32. *Roseberry.*—A pretty scarlet variety, of medium size, and very productive. Fruit ovate; flavor middling; early. Not now much cultivated, larger and better flavored fruit having displaced it.

33. *Swainstone Seedling.*—Originated by the gardener at Swainston, in the Isle of Wight, from Keen's Seedling. In England, of late, its reputation is on the decline. An uncertain bearer. Fruit large, ovate, light crimson, and fine flavor.

34. *Wilmot's Superb.*—This was one of the first attempts made to improve the Chili, and when it made its appearance caused considerable sensation among strawberry growers; it was, however, soon found to be a very poor flavor, and shy bearer, when it soon became neglected. Fruit of the largest size, round, though much inclined to become cockscomb-shaped; deep scarlet color, and ripens about mid-summer.

35. *Wilmot's New Scarlet.*—Like the preceding, not much cultivated of late; from its being a poor bearer, and second in flavor to many others. Fruit large, oval, bright scarlet. Medium season.

Dr. HULL has, in a former No. of this Journal, noticed a fruit called Victoria; the name leads me to suppose it to be English, but I know of no fruit under that name. British Queen has been sometimes sold as such. This present time a variety is advertised by an English grower, under this name. If Dr. HULL's fruit is English, I have not the least doubt, but that it is a synonym.

In 1850 three new strawberries, or rather *two new* and one old, made their appearance, namely: Myatt's Surprise, Wilmot's Prince Arthur, and La Delicious; the two first are seedlings, and may prove useful, but the last named is an old variety brought into notice under a new name; the parties who paid their $15 per hundred, can by now say in what its superior merits consist.

It has very frequently become my duty to recommend varieties to growers; my advice invariably was cultivate but *few* varieties; for a small garden three sorts are ample, namely, Keen's Seedling, British Queen and Elton; if there is plenty of room, and more variety is desirable, add Cuthill's Black Prince, Princess Alice Maud, and Myatt's Globe, which will be sufficient for the largest garden. This was, of course, for an English soil and climate, and for such there cannot be better than those which I have named. In this country Keen's Seedling and others may not succeed, yet among the remainder something valuable may be found.

To give any cultural remarks on strawberries, may appear a work of supererogation in this country, where this fruit is grown to such an unlimited extent; yet a word or two on the English mode of culture may not be out of place.

The soil best suited for this fruit is a good firm loam, though not of too adhesive a nature, which should be trenched from 2½ to 3 feet in depth, using plenty of good rotten dung. Early in June*—or as soon as the runners are of sufficient strength—select good strong runners with fine bold crowns, and plant them out in rows one foot a part in the row, the weaker grown varieties two feet from row to row, and the strongest growers three feet. Some growers still plant in beds, but in general the best cultivators have abandoned that practice and experience tells me it is not a good one. After planting they should receive frequent waterings until they are thoroughly established, when attention must be given to keep the ground hoed and clean from weeds though the summer and au-

* We prefer making new beds of strawberries in *April*—with the runners of the previous season. ED.

tumn. (In this climate many delicate varieties will require protection in winter.) The following summer will bring an abundant crop. While progressing in growth in spring, keep clean from weeds, and should the weather prove dry, when in bloom and swelling the fruit, water copiously—this should not be scantily, but when done well soak the ground—a few good soakings of liquid manure at this season is of immense value; all this should, however, be withheld as soon as the fruit approaches maturity, as a deterioration in its flavor would be the consequence if persisted in. When the crop is over, if large size and first quality is wanting for the next season, divest the plants of all runners as they appear; but if quantity, not size, is desirable, let all runners occupy the ground between the rows; keep clear of weeds through the summer, and in the autumn give a rich top-dressing of good dung; through winter and following spring, let the routine be as in the the first season; when the fruit now approaches maturity, a magnificent crop will repay the assiduous cultivator. When the second crop is over, the best growers destroy the lot, having a fresh one coming on to take its place. They will, however, bear a third season pretty well, after which they should invariably be destroyed. Strawberries will succeed in different soils and under other circumstances, but if the directions I have given are literally followed, success is certain.

In the present day, this fruit is *forced* to a very great extent, and with what success will be better imagined, when I say I have seen fruit of Keen's Seedling, British Queen and others, as large, if not larger, as high colored and rich flavored, out of the forcing house, as ever I have seen grown in the open air, under the most favorable circumstances. Proceed in this way; in June or sooner, if the runners are strong enough, take your pots (about three inches in diameter,) to the strawberry bed, with some rich light mold; into these lay your strongest runners, one in a pot, see that they have round, bold, well formed crowns—as they bloom better than the long pointed ones; as soon as they have rooted firmly in the pots cut them off, and shift into pots eight or nine inches in diameter, in good turfy loam, mixed with about one-third rotten dung; in the bottoms of the pots put a handful of soot; when potted let them be stood in an open airy situation, but not plunged, as they fill their pots with roots much better when the air circulates about the pots; (in this climate, under the intense heat of a burning sun, they had better be placed in a shady situation, but not under the drip of trees.) Water occasionally with liquid manure, to get them strong and well rooted, as on this will after success depend. As September and October approach, gradually withhold the water, and let them sink into a dormant state. About the middle of the latter month the plants should be stowed away in the following manner. Mark out a piece of ground about thirty inches broad, and of any given length; then lay a row of pots down each side, the plants outwards and the bottoms of the pots towards the center; the space between the pots should be filled with old tan, sand or any similar material, raising it a little above the level of the pots; on this place another row, keeping the rims of these within the rims of the bottom rows; fill with old tan, as in the first case; proceed in this way until there are five or six rows of pots on each side, when it presents the appearance of a ridge; the top is thatched or covered with litter, to throw off rain and keep the roots and plants dry and healthy. In frosty weather dry litter should be thrown over the plants to prevent them becoming frozen, (still more necessary here.) They are also more easy of access, and can be removed into the forcing-house at any time. Many large growers introduce their first batch of plants into the forcing-house the middle of November, which is followed by others every fortnight up to the end of April. But for more moderate growers the beginning of January will be soon enough to commence; on their first introduction keep them cool, near the glass, plenty of air, and a

moist atmosphere, until the plants are in flower, when it should be dry; at this stage the heat by night should never be more than 50°; pass the hand gently over the trusses of bloom, to assist in the diffusion of the pollen. After the fruit is set, the heat may be raised from 60° to 70°; water every alternate watering with liquid manure, while in bloom, and the fruit swelling; when in bloom all the small flowers should be picked off to about six to a truss, and when fairly set these should be reduced to three or four, which will be sufficient to a truss; syringe them frequently, except when in flower; when the least sign of green fly is perceptible, fumigate; as the fruit approaches maturity discontinue water; keep a dry atmosphere, with as much sun-light and air as possible, to enhance flavor. Cuthill's Black Prince, Keen's Seedling, and British Queen, are about the best for this purpose.

J. S.

Washington, Nov. 2, 1851.

THE GASES PLANTS FEED UPON.

BY DR. LINDLEY.

PLANTS play a very important part in the economy of the creation; for, independent of their relation to animals as the real source of all food, they are essential to the purity of the air. We are told by chemists, that the composition of the atmosphere is quite constant and uniform; that air, from whatever place it is collected, is always found to consist of the same proportions of oxygen and nitrogen and carbonic acid. This fact has now been established by a number of careful experiments, made by different observers, in various parts of the globe, and extending over a considerable period of time, so that it may in fact be considered as proved, not only that the composition of the air is uniform throughout, but also that it does not undergo any appreciable variation in nature from year to year. There is certainly something very wonderful in this, and indeed it seems difficult to understand how it really can be the case, when we observe the great chemical changes which are at all times going on in the atmosphere, and the enormous quantities of certain substances which are constantly being poured into it in various ways. Night and day all living animals are consuming the oxygen of the air, converting it into carbonic acid, and the same effect is also constantly being produced all over the earth, by fires, furnaces, lamps, candles, and in short by combustion in all its forms. Decay, putrefaction, and fermentation, are also giving rise to the evolution of carbonic acid; and lastly, besides all these sources, immense quantities of the gas in question are evolved from fissures in the earth, especially in what are termed volcanic districts. There are then, to say nothing of smaller or more local causes, at least half a dozen great natural operations, all tending to vitiate the air, diminishing the quantity of oxygen which it contains, and increasing the proportion of carbonic acid. All these causes, we are told, are exactly balanced and neutralised by the decomposing influence of plants, and the wonderful power which they have of absorbing the carbon of carbonic acid. We owe this remarkable fact to the researches of Drs. PRIESTLEY and INGENHOUSZ, extended, repeated, and confirmed by a host of other observers.

In Dr. PRIESTLEY's first experiments on carbonic acid or fixed air, it is evident that he regarded it as highly poisonous to plants; for in the first volume of his very interesting Essays on Air, he says—"Fixed air is presently fatal to vegetable life;" and he goes on to show that plants, in many cases, were very soon killed, when exposed to the influence of carbonic acid gas, collected from the fermenting vat of a brewery; he however observes,

that he did not repeat the experiment with pure carbonic acid artificially prepared, and regrets that he had not yet had leisure to do so. These experiments were repeated and extended by his friend Dr. PERCIVAL, who published an account of his results in HUNTER'S "Surgical Essays." The conclusion to which he arrived, was just the contrary of what might have been expected from Dr. PRIESTLEY'S experiments; for he states, "that fixed air not only retards decay, but actually continues the vegetation of plants, and affords them a pabulum, which is adequate to the support of life and vigor in them for a considerable length of time." So satisfied was he of the truth of this, and the important influence that the discovery would have upon the art of gardening, that he goes on to point out how the florist who is anxious to obtain a prize at some great meeting held for the encouragement of horticulture, might perhaps avail himself of the powers of "fixed air," either to quicken the growth of his plant if still immature, or to preserve it in all its beauty, and retards its decay if fully developed; and he accordingly gives several directions to gardeners who are willing to try the effect of carbonic acid gas on their flowers. Some years before this time, however, Dr. PRIESTLEY had observed that plants grew well in air which had been vitiated by the breathing of animals, and that they soon restored such air to its original state of purity; it seems that he did not at that time very distinctly connect the two phenomena together, for it was not till after Dr. PERCIVAL'S experiments had been published, and after INGENHOUSZ had promulgated his views upon the subject, that carbonic acid began to be regarded as essential to the growth of plants. It is not easy now, neither in fact is it very important, to decide exactly what degree of merit belongs to each of these three philosophers. The experiments of INGENHOUSZ were the most numerous and minute, and his views were the most strongly criticised by contemporary naturalists; at the same time he distinctly states that his experiments arose out of those of Dr. PRIESTLEY.

The circumstance which prevented many observers from believing in the importance of carbonic acid to plants, arose from the fact, that as in nature they are only supplied with it very gradually, and in small quantities, and as their organs are only fitted to absorb it when largely diluted with common air, so when placed in an atmosphere containing a considerable proportion of this gas, they are always more or less injured; and it was difficult to understand how, if carbonic acid in small quantities was food and nourishment, that in rather large quantities it would be hurtful and even poisonous.

Dr. PERCIVAL'S idea of the probable value of carbonic acid as a powerful agent in the hands of a skillful gardener, is one which naturally leads to several interesting considerations, and it has accordingly produced a number of curious experiments, which, though they certainly do not justify his prediction, or, indeed, give much prospect of any really important direct improvement in practical gardening, are nevertheless, very curious and interesting. The primary question of course is, are plants always able to absorb as much carbonic acid from the air as they require, and would benefit be derived by increasing the proportion of it, in the air of a forcing-house for example? When Dr. PRIESTLEY found that pure carbonic acid was hurtful to plants, he next tried mixtures of it with common air, and he found that even one-eighth of it rendered the air poisonous. INGENHOUSZ, after a great number of experiments, and, though quite satisfied that plants really decompose carbonic acid, speaks with great doubt of the effects which it produces when artificially added to the air. He says, "plants grow tolerably well in air to which a small quantity of carbonic acid has been added, especially if they are exposed to the sunshine; sometimes even they seemed to grow all the better for it;" but he adds, "that it is doubtful if this effect was really due to the presence of the carbonic acid." A second, and very

remarkable series of experiments is described by DE SAUSSURE, the result of which showed that the addition of carbonic acid, where more than a tenth was added, always did harm, whilst a twelfth produced a decidedly beneficial effect, if the plants were exposed at the same time to the influence of light; there are, however, unfortunately, several interfering causes in these experiments, which SAUSSURE overlooked, and which diminish their real value. Three years since some valuable observations on this subject were made by Dr. DAUBENY, who conducted a careful series of experiments, with the object of ascertaining what proportion of carbonic acid in the air, healthy plants are able to endure, without inconvenience. The result of his investigations proves that ten per cent of carbonic acid is not at all injurious to plants, and that it is sometime before even rather larger proportions of that gas begin to produce bad effects. Even as much as twenty per cent produced no injury in ten days.

In all considerations of this sort, it is obviously the best way to commence by studying the natural conditions of plants, before we begin to place them in new and unnatural circumstances. In nature, plants are supplied with an almost infinitely small quantity of carbonic acid, and the effect of their growth is to deprive the air which surrounds them of that carbonic acid, and to replace it by an equal volume of oxygen.

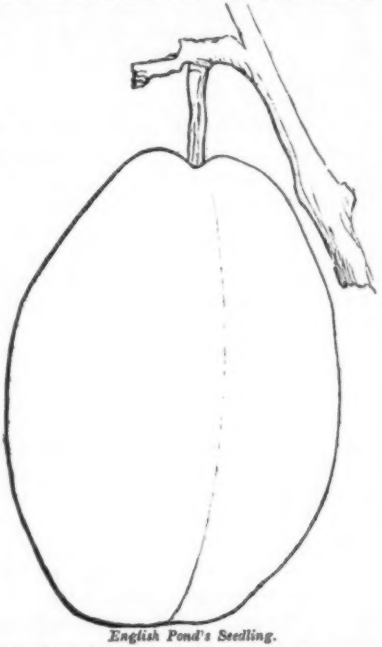
The chief difficulty which exists in comprehending the true bearings of this great fact, depends on the enormous magnitude of the entire atmosphere, and the almost infinitely large quantities which we have to consider. It is easy to form some idea of the quantity of carbonic acid which is produced in a given time on a square mile of the earths's surface, and which the plants growing on it consequently may be supposed to have to decompose in the same period. But it is very difficult to form any just idea of the whole atmosphere, or to comprehend the relation which exists between the bulk of the carbonic acid and that of the entire atmosphere. Large as the former appears to us, and enormous as its quantity is, when compared to the largest tree, yet it is a mere trifle, a thing of very little account, when contrasted with the bulk of the whole atmosphere.

If, for example, we assume, for the mere purpose of comparison, that on an average each human being on the surface of the earth gives out, in the course of twenty-four hours, twenty-four ounces of carbonic acid gas, a proportion probably not very far from the truth, the volume of the gas thus expired would be about twelve and a half cubic feet; and the entire quantity given out during a whole year at this rate, would be 4744 cubic feet of carbonic acid gas; having a weight of about 547 lbs., very nearly a quarter of a ton! If then we go a little further, and calculate what would be the bulk and weight of the quantity of carbonic acid that would be given out by the entire population of the globe, during a whole year, assuming its number to be 600 millions, and supposing that every individual required the same quantity of carbonic acid, we should then arrive at the result of very nearly three million of millions of cubic feet, or 316,266 million cubic yards of carbonic acid. This quantity is so large that it is difficult to conceive any just idea of its real volume, and the consideration is not rendered much simpler, if we reduce it into cubic miles; we then find that it would amount to about 58 cubic miles. On the other hand, if we calculate the weight of such a quantity of carbonic acid, we are are nearly as much bewildered with high numbers, for we find that it amounts to 326,200 million pounds, or 145 million tons! and this, be it remembered, is but a very small portion of the carbonic acid which plants must absorb every year.

NOTICE OF TWO LARGE PLUMS.

BY M. DESPORTES, ANGERS, FRANCE.

1. ENGLISH POND'S SEEDLING.—When I was in your country, two years ago, I paid a visit to Mr. POND'S garden, at Cambridgeport, Boston. I showed him the portfolio which contained the drawings of all the fruits of our collection. He there perceived the name of "Pond's Seedling" Plum. He at once exclaimed that the drawing corresponding to this name was not the genuine variety originated by him; that his Pond's Seedling is smaller, and rounder, and does not in the least resemble ours. Now, as he is the originator of the true Pond's Seedling, I concluded that ours was false. I was confirmed in this opinion when I read the description you give of it in your "*Fruits of America*," page 309. If we have not the American Pond's Seedling, we have the English one, of which the *Revue Horticole*, (our standard fruit gardening Journal) has given a picture and description in the number of March 15th, 1847, page 101. This variety is very different, as you will observe by the sketches in oil which I send you herewith, from the American one.



English Pond's Seedling.

The following is a description of the English Pond's Seedling, taken from a fruit grown in the nurseries of Mr. Andre Leroy, at Angers.

Fruit oval, 2¼ inches long, 1¼ inches in diameter, slightly uneven about the middle of the length; skin violaceous red, sprinkled with many blue small dots about the stalk; dusted with light gray about the apex; deeper colored on the sunny side, and covered everywhere with a nice whitish blue bloom; stalk half an inch long, slender, set in open cavity; a small suture divides the fruit in two parts, one of which is more swollen than the other; flesh yellowish, thick, juicy, adhering to the stone, slightly acidulous, very pleasant. If it is not first rate, is a good second rate.

This kind is very fertile, and always a constant bearer; very profitable both as a dessert and a cooking one. It is the largest and handsomest plum I know, not excepting the fine Magnum Bonum. It weighs two and a half ounces. It ripens from the end of August to the 1st of September. Tree vigorous grower; the young wood is smooth, gray spotted and dotted; leaves broad, roundish, terminated lanceolate.

[This same plum is known as Pond's Seedling in England, (see Catalogue of London Horticultural Society.) It has, no doubt, occurred by some error in sending out the variety from this country. The question is, what is the true name of this large plum? The

description of the fruit alone would lead us to believe it to be the *Duane's Purple* of American nurseries. The branches of this tree, however, are gray, and the young shoots very downy. M. DESPORTES says gray but smooth. Still we incline to the opinion that it is Duane's Purple. An importation of the tree will settle the question speedily. ED.]

Plum de l'Inde.

2. PLUM DE L'INDE. — We received some years ago, under the above name, the plum of which the description follows: Tree vigorous, with long upright branches; wood smooth, gray dusted; leaves roundish, sometimes lanceolated; thick nerved, having two glands at the base; petiole three-fourths of an inch long.— Fruit large, obovate, larger about one-third of the length, uneven; color violet redish, dotted with some broad gray and coarse spots; dusted with small gray and blue dots, principally about the eye; covered with very nice blue bloom; suture shallow; skin thick; flesh yellow redish, firm, juicy, melting, sweet, rather adhering to the stone. This very handsome plum is a good second rate one, and well deserves an extensive cultivation. It resembles very much our English Pond's Seedling, but it differs from it by its being rounder, and ripening fifteen days later, that is to say, about 15th September; it is also more red.

BAPTISTE DESPORTES.

Angers, (France,) Sept., 1851.

RENOVATING OLD ORCHARDS.

BY W. R. COPPOCK, BUFFALO.

IN a former number of the Horticulturist, I detailed some experiments in progress for rejuvenating an orchard of old apple trees, by trenching, special manuring, and cleansing the bark by scraping, washing, &c. &c., (vide Horticulturist for March last.) Another season's growth has passed, and the results having become so apparent and decisive, I hasten to notice them, for the benefit of others similarly possessed.

These trees are from twenty to twenty-five years old, originally forming a part of a large orchard, now merely divided by a division fence, the general aspect and condition of all being alike. They have now had two season's growth since my applications began, and marvellous are the results.

Not deeming in the onset, the fruit in its varieties, of the least possible value, being extremely small, knotty and bitter, at the same time unrecognisable, and aiming only to make the trees available, I grafted each season, about one-third of the top with choice kinds.

By these processes a thorough metamorphosis has taken place. The growth of both new wood and grafts have been extraordinary, while the foliage which before was small and sickly, and usually fell off at mid-summer, has in every way changed; becoming large, beautifully green and full of vigor, while their neighbors on the other side of the *fence*, untouched by art, and left to nature's skill, are denuded prematurely of their foliage and seared by neglect.

From the impetus given their growth by the stimulating cultivation they have received, the crop in quality—particularly in numbers—this season is but small, while the fruit itself has become entirely changed in all its characteristics. Before, no specimen could be recognized—while now from amid the ruin, we find the *Porter*, Ribstone Pippin, Golden Reinette, Golden Sweeting, Swaar, Twenty Ounce, Detroit Red, and other varieties in the perfection of size, form and color!

From forty trees, some of which bore but a few specimens, thirty barrels of picked fruit have been marketed, reserving some thirty bushels for home use.

Thus while we hear of various persons cutting down old apple orchards and delighting in the blazing fire that does not "*snap*," I feel amply repaid for the expense and labor in the successful experiments I have thus made in the saving of what was deemed useless cumbrances, and producing therefrom a balance fully equal to twenty dollars each.

It is far easier to cut down and despoil a tree, than to replace one. So long as the tree is not radically diseased and rotten, but simply neglected, moss covered, and unpruned—its fruit in the mean time degenerated until all its characteristics of size, form, color, and flavor are changed, such trees may by judicious methods be so restored as not only to be profitable in their own fruit, but as stocks for grafting, forming if desirable entirely new heads.

Already have some of my grafts (two years old) began to bear, while all have taken such start that in a few seasons the whole tops will be blossoming with the Northern Spy, Wagener, Melon, Baldwin and other valuable kinds. Thus assuredly, aside from present pleasure and profit, ten years of time has been gained.

Yours truly, W. R. Coppock.

Longsight Place, near Buffalo, Nov. 17, 1851.

EXPRESSION IN ARCHITECTURE.

FROM THE LONDON BUILDER.—BY H. S.

Some are of opinion that the beauty of the human face consists entirely of expression; and in truth the charm of an agreeable countenance seems to arise from the capability of the features to reveal mental and moral beauty; and if expression be not the entire, it is at least the soul of beauty. Mere sensuous grace is perhaps as unimportant in architecture, which is little else than a lifeless mass if genius infuse not this spirit into it; while if it breathe the idea of the designer we are enchained by its significance and forget the inferiority or the entire absence, as it may be, of abstract beauty. Volumes of thought and feeling flash from the eye, and the various affections of the mind exert an influence upon the permanent form of the countenance and impart to it their own peculiar characteristics: could we have a better illustration of the diversity of sentiment which should beam from different buildings according to the variety of their original and destined purpose?

Certain it is, we can thus express ideas by form: different forms are suggestive by a natural association of different sentiments; and the architect must not so much aim at abstract beauty as at the conditions of the intended expression. If, for instance, the building be for a gay purpose, he must employ those forms and lines, and that style of composition that will express gaiety. If for a solemn purpose, such a character of design, and such proportions, as will yield a solemn aspect. And this gaiety and solemnity are qualities of the destined use or purpose of the work expressed by the features of the building, as qualities of the mind are expressed by the features of the face. Thus rough-hewn and boldly rusticated masonry, harsh angular lines, lofty and unpierced walls, will give the ideas of a prison; prison-like strength, combined with palatial sumptuousness of decoration, will characterise a bank; severity of outline and form, a character grave and solemn, of patriarchal simplicity, in which nothing is hidden, intricate, or but partially told, and the absence of all imaginativeness, will distinguish a justice court.

But architectural qualities must not be confounded with moral or metaphysical qualities. We speak of the "smiling aspect of a building," and "the frowning aspect of a building;" but these are figurative expressions: and when we say a building is grave or gay, or mirthful or solemn, we do it by a metaphor. The building has material qualities; the institution which it enshrines or serves, has moral or mental ones; but it is on the analogy between these two classes of qualities which are naturally associated in the mind, that architecture is dependant for its power of expression. Thus we cannot directly or literally express the mirth or pleasure of a ball-room, or its associated ideas of human beauty and grace; but we can express qualities analogous them,—naturally connected with them,—and will characterize such a building by elegance of form and proportion, graceful lines, softness of light and shadow, and minuteness and delicacy of ornament and detail. The ideas of royalty and power associated with a regal palace, we can only shadow forth by majestic proportions,—by boldness of composition, with which, together with power of light and shade, we secure that dignity which is said to be "the harness of power;" while the idea of earthly dominion finds expression in horizontal composition and wide-spreading dimensions. And what the architect must observe is, that there be an analogical correspondence between the qualities developed by the design and composition of the building, and those emotions of the mind which arise from the contemplation, or belong to the ideas, of its use and destination.

This characterizing of edifices, according to their purpose, is among the highest effects of mind on inanimate matter, and is a more wonderful conversion of stone into "golden visions of thought and feeling," than in sculpture itself, as there is less imitation of nature. It is a source of pleasure, of interest, of edification, of refinement, and a gratification of the innate love of variety.*

The purpose of the entire building should not only be thus expressed, but each ornament should tend to illustrate the nature of the particular part to which it is applied and partake of its general character and relations. From the particular properties of that portion originate the motives of its design and combinations, while the ornaments must

* This love of variety in the human breast requires that dwelling-houses should differ in their character from each other; an arrangement further dictated by the analogy of nature in reference to their occupants. They should express "domestic," all of them, as nature expressed "man" in the form and face of the human subject; but they may do this without being all alike. If architects would free their minds from unnatural shackle and undue precedent, we should have as great variety of houses in our streets as of casts of countenance,—a great relief to our monotonous "town-imprisoned" life. This diversity of aspect, form, and character would not be without its moral effects. A man's love of home, which is the parent of many virtues, would be stronger when his house possessed a proper individuality, a distinct character. When it is different from all other houses and homes, it must make a greater, a stronger impression on his fancy and imagination, and, through them, on his feelings.

be in harmony with the order of architecture and the general expression of the building. As in grammar, a word or phrase must correspond to the genius and received forms of the language; so in architecture, the parts must harmonize with the total,—the main idea of which must illume every part of it.

The subject of expression applies to the inside of a building as well as to the outside. External expression is insufficient; unless the whole be adapted to and indicate its use, within and without: unless the idea of its purpose pervade it, as it were, it is not a true work, and the fact will be sure to betray itself, just as with one who shall endeavor to make his face express what he does not feel. We soon, in any case, detect the look that is "put on." The grand secret of eloquence, it has been said, is to be in earnest; and our buildings will be eloquent if we are sincere and truthful in designing them,—while nothing will give satisfaction that is not *thrilled* with the genuine sentiment.

But the use of each apartment in a house should be indicated for its own sake. The ancients dedicated each chamber to the divinity that presided over the use to which it was applied, and decorated it accordingly. A room decorated, for instance, to mirth and enjoyment was so treated that the ornaments and every object had a tendency to excite pleasing and cheerful thoughts, and promote hilarity. Sleep has its emblems, by which to characterise an apartment devoted to that use. The same may be said of festivity, study, literature, art—all have their emblems or associations by which we may indicate dining-rooms, studies, libraries, galleries of art, &c. For many of these there would be no impropriety in drawing upon the mythology, the Apollo, Morpheus, the Muses, and other beautiful conceptions which might yield us considerable aid in this matter. We do not attach sufficient importance to the embellishment of the interiors of our apartments. Michael Angelo, Raphaelle, and other great artists, it should be remembered, were wall and ceiling painters to their contemporaries. Attention to this subject would secure us more diversity in the interior of our houses—a desirable object. The natural love of variety requires a different form and character of decoration and finish for each apartment, and as much as possible a different view or scene from the windows; a great relief to a confined invalid. This could be done without having Turkish and Indian libraries and boudoirs in an Anglo-classic or Italian house. Chinese drawing-rooms may please children or unthinking persons, but no man of taste could take pleasure in such puerilities. Here it may be observed that, as in the exterior, the appropriate expression and needful variety would be in a great measure gained interiorly, by having the shape and proportion, size and disposition of windows, doors, and other features exactly adapted to the destined purpose of the apartment. This would easily distinguish rooms for pleasure from those for domestic service, as in the latter uniformity has given way to utility, and comfort has been secured, though it may be at the sacrifice of uniformity and other conditions of beauty.

There is a difficulty, I admit, in the characterising of some buildings exteriorly. Obstacles are too often flung in the way of truthful design. Sometimes two different, and almost contrasting, institutions have to be provided for under one roof, rendering suitable expression on the outside of course impossible; as in the case of the Assize Courts and St. George's Hall, Liverpool. Some buildings of single purpose, too, it is difficult to characterise: for a railway station, for instance, it would be hard to define the appropriate style of expression. Yet even here a complete adaptation to its purpose will go far to express its character. A railway being for the transmission of goods and passengers with the greatest possible facility and speed, large sheds are required, large doors both for ingress and egress, gateways for carriages and vehicles of every description,—separate sides

for departure and arrival; and these must, in a great measure, distinguish the terminus. And though we could scarcely say what general style of decoration for such a building should be chosen, or what general form and proportions it should have, beyond what utility would demand, yet in the sculptural embellishments a good deal might be done towards indicating its purpose by means of symbols. Rapid flight, speedy change of place, the annihilation of space and time, the unity and amity of distant places, and other associated ideas, might thus find expression. But the difficulty I have admitted to exist is of less frequent occurrence than is supposed: few buildings are similarly circumstanced to the one I have referred to. An ingenious writer, in a recent work on the principles of architecture, has complained, that to distinguish a clubhouse from a mansion is beyond the power of architecture; a truth we must admit, but without the slightest disparagement to the art. He has overlooked the fact that a clubhouse *is* a mansion only for a larger family, and that architecture is not called upon to make a difference where no difference exists. A clubhouse is not a public, but a private building,—for a private society; where a gentleman can have the comfort and accommodation of a private house, just as a cottage, a villa, or a mansion is for the use of a family; and it *is* as far as the public are concerned a private house, or mansion; and the passing stranger need not know that it is anything else: the expression of "mansion," therefore, is not only what the clubhouse will naturally assume,—it is really the expression it should have.

But almost every building that has a distinct purpose, may have its distinct and corresponding expression,—is susceptible of receiving allegorical or other illustrations of its purpose, so as to indicate that purpose; if, in the first place, it be truthfully adapted, and if the architect has the requisite mastery over the resources of the art. If a Gothic church in its perfection is a petrifaction of religion, a truly designed college will be a similar embodiment of literature; a palace, of royalty; an exchange, of commerce. Beauty, however, is not incompatible with any, even with the needful character of a prison, which may suggest ideas of durance and gloom, yet display general forms and proportions on which æsthetic feeling has been exercised. Guided by analogy,—a natural association of ideas,—we may find abundant means of giving at least a general tone to every edifice, in harmony with its use; among which may be enumerated the arrangement, size, and character, as simple or decorated, of doors and windows: public buildings, not much divided internally,—consisting chiefly of one great apartment for a large assembly of people, such as churches, chapels, public schools, theatres, concert halls, should have large and expansive doors of entrance, which would not only be convenient, but would assist in characterising them, as such doors would be suggestive of the idea of extensive ingress and egress of people. In places of worship in particular, the entrance doors should be prominent, rendered by ornament conspicuous and inviting, and much wider than they generally are, in order to avoid unseemly thronging and disorder, during the discharge of a congregation. Many instances of insufficient means of egress might be cited, causing the exercise of devotion frequently to end with a scene too much resembling a Bartholomew fair. Windows are susceptible of great beauty, great copiousness, and truthfulness, and nice inflexion of significance; but in a religious or other building where a solemn or sublime effect is contemplated or sought to be obtained, windows might with great propriety be omitted, or confined to internal courts or gardens, leaving the exterior effect to those grandest of architectural features—the colonnade and dome. The dome contributes much to palatial dignity, and is expressive of the loftiness and breadth that should characterise great national purposes: having its type in the sublimest of all earthly spectacles—the firmament,—it can never be surpassed by any feature of any style, as an element of grandeur. It

has assuredly never been so applied as to fully exhibit its intrinsic beauty in modern European design.

Towers, though no longer needed for defence, are useful in expression—they signify strength and durability, and may be used to indicate a purpose that is deep-laid in our nature, paramount and indestructible. Colonnades are indispensable to the production of the more elegant and magnificent qualities. Gables, roofs, and chimneys are not to be forgotten or neglected. Every necessary part or feature may become a valuable element of expression and power. Order and style of architecture are means of expression; we are no more bound to one style than to one of the ancient orders of architecture. One is generally better for indicating a given purpose than another. I believe that one indissoluble chain unites all true styles of architecture wherever they have been developed—which are but a harmonious variety of one type. Those who suppose that only the picturesque Tudor will be a favorite in England for domestic purposes, forget the flexibility of the human mind.

Rustication must also be considered as architectural language; and the prohibition of its use would be an unnecessary and irrational limitation of the means of variety and significance. Rustics were much used by the Romans, among whom they were chiefly devoted to the grottoes of the rural deities; and among us they may be made the means of beauty and power. They give vitality to a wall or pier, and are susceptible in themselves of many shades of expression. They secure relief to adjacent pilasters, and give brilliancy, and delicacy, and value—by means of contrast—to the upper portions of edifices, when employed in basements, to which, as they suggest ideas of strength, they are peculiarly fitted. If stones can be put together in a beautiful or expressive manner, and that they can be and have been, none I think will deny, there appears to me no harm in making that manner so prominent as that attention will be drawn to it.

The character of a building depends on the choice of material employed, whether brick or stone; or its description, as texture, color, quality; and its disposition or arrangement. Quality of workmanship is also something towards indicating a building's destination. Character may be modified by the manner of executing details, individual mouldings, and other members. Purely geometrical ornament is expressive and poetic, and presents a wide field for imagination: an advantage of such decoration is, its not being seen elsewhere. We may have forms by drawings upon geometry perfectly unique, that do not exist entire in nature; and a new creation, so to speak, is thus called up—

——— An independent world,
Created out of pure intelligence."

All purposes of buildings cannot be expressed by equal beauty. The comprehensiveness of our nature enables us to embrace every shade of character and every phasis of beauty, and fits us to sympathise with truthful manifestation of thought and feeling wherever seen. The arrangement, as well as the choice and design of ornaments, is an important point. Concentration is an element of power, but whether ornament be concentrated on particular and important features, or dispersed over the whole facade, depends upon the invariable laws of composition and design, and the influence of the idea that seeks to be expressed. The two sister arts of Painting and Sculpture, in their higher manifestations, are also among the architect's due resources for characterising his productions; for statuary, bassi relievi, or pictures, when properly applied to the embellishment of architecture, are part of the building, which would be incomplete without them, and therefore they are architectural members or features, in not too broad a view of the art: used as far as they are demanded by the architect to carry out his idea, they are architectural embellishments;

part of the language of the art. Whatever else Painting and Sculpture may claim to be, they are handmaids of architecture: one of their offices is to administer to architecture: they are both something apart from this ministry—something on their own account,—but assuredly that is one of their provinces: they are the architect's auxiliaries, means of expression and power which he has a right to avail himself of, in giving the higher tones of expression to his design. All ceiling, mural, and other paintings introduced into the different apartments of a public edifice,—all sculptured subjects, bassi relievi, or other works, placed interiorly or exteriorly, should be so chosen and adapted as to further set forth its character and purpose; and if they be so chosen, and harmoniously associated with the building, and illustrative of its use, they may, I think, be considered as architectural ornaments; as no less a part of the whole than a modillion or dental of the cornice. Sculpture originated in combination with, and in subordination and subserviency to architecture; and the secret of the great success of the Greeks, as also of the mediæval builders, may be found, I think, in the assistance which each art rendered to the other,—their union for the purpose of giving greater force and significance, like the different organs of life, which, when united, to borrow a simile, expressed the idea no single part could represent.

S. H.

Reviews.

RURAL HOMES, *or Sketches of Houses suited to American Country Life, with original plans, designs, &c.*: By GERVASE WHEELER. (New-York, CHARLES SCRIBNER.)

THE multiplication of books upon Rural Architecture, is, in one sense, a most gratifying aspect of the times—since it shows conclusively the appetite of the public for the beautiful, the tasteful, or at all events, the ornamental in their dwellings. Undeniably, it is a proof of the progress of civilization, this fact, that men desire to raise the character of their homes; and clearly, the rural architecture of the country, is in the full tide of gradual change—we hope amelioration—since every possible *notion* offered by real or false architects, and architectural writers, is embodied into solid shape by some one or other of our countrymen.

Our grown men try experiments with styles of building, with as little *naive* or recklessness, and as little heed as to the consequences, as our young men try experiments in "mint juleps" and "brandy smashes," and we fear the immediate results upon the constitutional taste of the country, in one case, and the constitutional health of the individuals in the other, are pretty much the same—that is to say, both excesses beget a sort of flashy character, not very likely to bear close criticism, either by the canons of taste or morality. The only consolation in the matter is, that we cannot be accused of apathy—in short, we are rapidly acquiring knowledge of the world, and the art of building, determined, like the young man who was reproved by his father for his "fast" style of living —"to see the folly of it for himself!"

We shall do Mr. WHEELER the justice to say, in the outset, that he has produced a very sprightly book on the subject of rural architecture. The volume is eminently readable, abounds with many excellent suggestions, especially as to matters of taste; shows a ready talent for imparting information, and leaves the novice who has perused it, with the impression that architecture is a pleasant sort of accomplishment that may be taught in six easy lessons, and practiced for his own purposes, by almost every country gentleman,

with the same facility as running-hand itself. We are a little inclined, in criticising it more closely, to select as a text, one of the author's own paragraphs, which he throws out, we fear, as the Italians throw sugar plums at the carnival—not expecting you to take them for anything more solid than pleasant jokes.

"Houses—says Mr. WHEELER—may tell very well in advertisements, and speculating builders know how to make them look sweetly pretty upon paper, but, *dear friends*, take care that you thoroughly satisfy yourselves that you can make them homes, before you commit yourselves to a choice that you can afterwards repent."

Amen! we say to this, with all our heart. And now saying Amen, and finding that Mr. WHEELER is an architect who writes not merely as an amateur, since he loses no opportunity to tell us in his preface, and throughout the book, that "as an architect he has mastered the rudiments, technicalities, and theories of the science," we naturally turn from the "sweetly pretty" letter-press of the work, to the more practical consideration of the designs themselves—as suited to "American Country Life."

The Frontispiece—is what the author calls the Homestead, and which he defines as a "house suited to American life, manners, and climate." It is amusing, looking at it in this point of view, to see how transparent is the fiction which covers Mr. WHEELER'S English education. This design is, in the first place, one of the worst examples of that *bastard* style of Elizabethan, which all true architects have pronounced the most debased of all styles. The roof seems to pierce the sky like a wedge—the contorted copings of the gables have the uncomfortable twist of an eel in spasms, and the parapet to the tower is a copy of the absurd whimsicalities common to old English manor-houses of the time of Elizabeth. The deep parapet gutters on the right elevation of this house, are also English features, utterly unsuited to the American climate—and one which, whenever it is adopted here, is the cause of endless leaks and indefinite tinker's bills to the American pocket. The only really American feature in the house, is the broad square veranda which Mr. WHEELER seems to have added to his English design—and that it has been added as an after thought, and not originally composed with the rest of the design, is painfully apparent from its total incongruity—it being, in fact, a broad wing, with a projecting bracketted cornice, and an almost flat roof, tacked on to the steepest roofed edifice, with high parapets and the most meagre of gothic cornices. Oh, Mr. WHEELER! this may be "sweetly pretty," and it may be built for twelve thousand, but it is not a house suited to the American climate.

"A Country House," page 60, is one of the best plans, and most satisfactory and unpretending elevations—but how any architect who has "mastered all the theories and technicalities," could design a veranda so poor and meagre in its cornice and supports as the one shown in this elevation, it is difficult to conceive. Here is, also, the same want of unity of design between the house and the veranda—the former having boldly projecting eaves—the latter looking like a cropped terrier, who is minus ears and tail. The small window over the door in the wing is crowded out of both place and proportion, and no attempt has been made to make it compose properly by adapting its form to the place and purpose it fills.

The Gothic Cottage, p. 72—which the author has built in Connecticut, is, we suppose, another illustration of his talent in designing houses "suited to American country life." Here is a cottage one story high—say 12 feet, with a roof running up as steep and high as possible—say twenty-five feet more, and looking like a tall extinguisher on a short candle. What is the inevitable consequence? Simply this, that all the sleeping rooms in this house are entirely under the roof, and are thereby ten times as hot in our intense summers

as they would be if not under the roof.* In a cool climate like that of England, this nestling under the roof, as a toad nestles under a stone, is snug and comfortable—but woe to the Yankee who builds a "medieval cot" upon this principle, for this climate. "Hot corn and baked pears," we are told, in a certain nursery rhyme, have a tendency to "knock a darkey down stairs," whether from the excess of delight or not, is left to the youthful imagination. But a July night in the cock-loft of one of these garrets of a high peaked English cottage, built in our "diggins," will cause a poor wretch to seek the descending scale of the house with emotions more in harmony with DANTE'S *Inferno*, than what is befitting and comfortable in "American country life."

The "summer lodge" (p. 78) has the merit of being simple and unpretending—but is marked by the same boldness and poverty of detail and composition. The veranda at the side reminds one of CALVIN EDSON the walking skeleton, and the chimneys look as if they had been "sat-down-upon." In the plan, it would be difficult to say why the pretty library, (No. 4,) should be deformed by crowding the fire-place in the corner—when it might as well have been put in the centre of the side wall. The door leading from the hall into the spacious drawing-room opens close to the fire-place—without any necessity for it; and would, if executed according to the plan, utterly spoil the symmetry and proportion of the room.

The "Suburban villa" (p. 107) is a really good design, and the "Southern home" (p. 132) has points of merit: but the "Parsonage house" has the same bold-corniced porch as that we have already noticed, and the plan of the "small southern house," (p. 141) with four rooms of the most ugly and inconvenient shapes, has the fire-place in three of them stuck in the angle or corner of the apartment, in a way inexcusable in any man who has "mastered the theories and technicalities" of his profession.

Mr. WHEELER'S desire to please the American public, and his talents for belle lettres, have led him into the discussion of the varied beauties, principles and theories of the subject, which he treats in a manner by no means new with him, but with suggestions borrowed from the works of native authors who have trodden the same ground more earnestly and truthfully before him. In the main, he presents these principles fairly, and often with point and elegance of expression. But it is entertaining to see how thin is his republican disguise, and how poorly the dress fits him, notwithstanding his ambition to be the model architect of our rural homes. The following extract will explain our meaning. He has been describing, with some gusto, a model *American* village—has already built *the* church and the school-house, and continues the tableau as follows:

"Not far from this might be placed the parsonage—such an one as exhibited in this book:—unobtrusive, solid, and simple, connected with the church by a something which distinguishes it from other dwellings, and yet possessing features in common with the people's homes. Then could come houses of differing size and character; the modest cottage of the working-man, with its gay little garden plot and bright flower bed; the somewhat larger dwelling of the store-keeper, merchant, and professional man; the *great house of the village* with its noble woods and lawns, and everything that can show cultivation thereof by art. The village inn, no flaunting, plate-glass bedizened temple of Bacchus, but a cheerful, spacious traveller's home," &c.

Now we do not deny that this is a "sweetly pretty" picture of a village, but leaving out the "store-keeper's" house, is it not essentially *un*-American? Nay, is it not essentially English? *The* single church, *the* parsonage, the modest cottages of the working-

* For this reason most American architects have, in adapting the English cottage style to this country, introduced a *full* story for the chamber floor instead of the original half story.

men, and, towering above all, "*the great house of the village*, with its noble woods, and lawns," &c. The plain reading of this is, simply an Established Church, a rural peasantry, and a nobleman's seat; instead of the republican features of one of our prettiest country villages—say a New-England village—with its numerous places of worship, its broad avenues of Elms, overshadowing no single great man's house, but many homes, marked by that general diffusion of comfort, independence, and growing taste, which is the characteristic feature of our model villages in this country.

While we owe to foreign architects much that is beautiful and valuable in our public and private edifices in this country, and gladly acknowledge the debt, where it is due to real talent and integrity, we have no toleration of pseudo-architects from abroad, who leave home with too small a smattering of professional knowledge to ensure success at home, and after three or four years of practice in this country—marked by constant proofs of incapacity to understand our people or their wants, undertake to *direct* the popular taste, as if they were thoroughly familiar with our social habits and institutions. Mr. WHEELER is one of this class. His book would lead us to suppose him the most accomplished and most conscientious man in his profession, and, if the reader were an entire stranger, also to believe the writer to be a new world citizen, whose native talents had been developed by large culture in the old world; while in fact, his professional practice has, to our own knowledge,* been such as to leave an impression most unfavorable to the reputation of an architect, everywhere that he has deigned to put into substantial shape any of the "technicalities and theories" that he has "mastered" on the other side of the water.

"I have mentally headed every page"—says Mr. WHEELER in his preface, "with a sentence suggested as a matin and even song to every architect and amateur—Mr. RANKIN'S great maxim, "Until *common sense* finds its way into architecture, *there can be but little hope for it*."

What will our readers say to a man who writes thus, and then puts *stained glass* into the windows of a *stable* of a gentleman's country seat! And yet this brilliant triumph of *common sense* is the offspring of Mr. WHEELER'S taste and talents in a case where he had *carte blanche* and entire control, in a country seat not a thousand miles from New-York.

While we find much that is instructive and agreeable in this volume of Rural Homes, we must caution our readers that there is little that is *American* about the work, and say in the author's own words, applied to others—they are "sweetly pretty on paper—but *dear friends*, take care that you thoroughly satisfy yourselves that you can make [American] homes of them, before you commit yourselves to a choice you may afterwards repent."

* The fact, that in former works we have published one or two of Mr. Wheeler's designs, must be taken as proof that further acquaintance with the architect and his works, have forced us to abandon our earlier impressions.

Foreign and Miscellaneous Notices.

RURAL LIFE IN HUNGARY.—Messrs. Editors: It was in the beginning of May that I reached a village in the central part of Hungary, lying in the great plain which stretches from the Theiss to the foot of the Carpathians, on the eastern borders. It will be unadvisable, for obvious reasons, for me to give the name of the village more particularly. Suffice it to say it was a town in the very center of the land, entirely inhabited by the *Bauer*, and with no nobleman owning a foot of ground in the limits. It was quite probable I was one of the first travelers—certain the first American—who had ever entered it. It was so far removed from the great routes, that only two or three in the whole population could be found who even spoke German. A better example of a simple Hungarian *village* could not probably be met with in the land. I had reached there, as I traveled every where in the interior of Hungary, in a private carriage from the last gentleman whom I was visiting. This is the universal custom in the country, and is a part of that generous hospitality which comes so strikingly before the stranger, every where in Hungary. It is almost a necessary politeness, as the public conveyances are few, and it is not easy for a stranger to hire others.

I was furished with a letter to the clergymen, and though his German was somewhat limited, he received me with the heartiest welcome, and by the aid of mingled Latin, Hungarian, and gestures, we managed to understand each other moderately well. He entered at once heartily into my design of seeing Hungary—even the country life—and in the afternoon took me on a long walk through the village.

It appears the *Bauer* here had never been, at least for many hundred years, under feudal exactions. Though they were not allowed till 1848 to vote for members of the National Parliament, they had the right to elect their own town-officers, and the only burdens upon them were the duty of military service to the State, and certain light taxes. Under such a system, with their own judges, their own aldermen, and managing independently the affairs of their township, there had grown up a very sturdy, free population in the village. There were no nobles there—no rich landholders, but there was no poverty and no slavishness. As I walked around among them, they seemed to me like *men*—free, independent men—more than any population almost I had ever met.

As I learned afterwards, there are large districts in various parts of Hungary, where the Bauer have enjoyed such free institutions. I had heard that this village was famous for its handsome men, and I found it did not at all belie its reputation. In every part, in our walk, we met tall, vigorous, well-formed men, whom in any other land one would stop to gaze at, though here they are scarcely remarkable. The more I saw of this people here, and also in other parts of Inner Hungary, the more I was struck with the advantages to a nation of a free agricultural life. There was a certain *richness* and heartiness of feeling, a certain manliness in them, such as one would seldom see in a manufacturing class. They came before me like the early patriarchs—simple, dignified men, with a courteous hospitality and a *poetry* too, which we must believe marked those fathers of our race. It was very striking here, in this village, to see middle-aged men with their flowing beards, meeting one another with a kiss. Then the Bauer, wherever we visited, met us with such real courtesy—poured out their best before us, and always insisted on going out even to the last gate, to accompany us. It seems, too, as if their life, on these vast plains, with their herds, so solitary, in the starry nights, and amid such grand scenery—and their pursuits, so often in the free air, had given them a wild, poetic turn, which history shows us to have belonged to the early shepherds and farmers on the Chaldee plains.

No where did Kossuth's poetic eloquence find such a passionate response as among these farming-peasants of the Hungarian plain. His appeals to the great Being who watches over the rights of his creatures, and whom he called the GOD OF HUNGARY, seemed to them to come from some one almost superhuman. As he spoke of freedom, of brotherhood, of the wrongs of their fatherland, and the disgrace of slavery, they answered with tears and with shouts of enthusiasm. Through the villages of Central Hungary there was scarcely a peasant who could grasp scythe or whip, who did not march out at his call to join the Hungarian army.

An agricultural population usually strikes one as inferior to a manufacturing in activity of thought; but this fault does not appear among these farmers of the Hungarian plain. The incessant *political* life and movement, through their whole history, in Hungary, have, beyond anything, educated the people. And one could see that these men had not grown dull or inactive at all in their secluded life.

But especially could you observe the advantage of their pursuits in their full, vigorous, manly forms. It was a pleasure to look at men so healthy, and enjoying such a fullness of life, without too the usual sensuality which accompanies great strength and overflowing health.

Now that I am speaking of this, I would say that I took considerable pains in Hungary to notice the *diet* and *habits of eating* of the people, as connected with this remarkable vigor of

the race, hoping some useful hints might be derived for America on the subject. This seemed more desirable, as there is no country of Europe so resembling our own, or at least the Middle States of our own, in climate. The same extremes of heat and cold; the same sudden, violent changes of temperature; the same clear, stimulating atmosphere, which mark the American climate, and distinguish it from the usual European. There are districts in Hungary which produce the most delicious grapes and melons and peaches in summer, which are buried in snow in winter, precisely like the inland counties some years in New-York. And in traveling over the best part of the land, I might have thought, as far as productions were concerned, I was journeying through the plains of inner New-York or Pennsylvania; the only exception being the *vine*, for the want of which in America I am disposed to think the cause is not to be sought in the climate.

In respect to the habits of the people, the great peculiarity seemed to be their *temperance* in eating and drinking, and at the same time their making of the meals a pleasant social occasion, and not merely a means of filling up the stomachs. When I say they are "temperate," I mean they indulge in no excess; as, in respect to wine-drinking, there is scarcely a man in the land who does not drink the light wine at his dinner and supper. But with the Hungarian the meal-time is a time for social intercourse, when friends meet; or when the children and relatives all gather with the parents, and have almost their only merry, familiar conversation, during the day. They sit a great while at table, and taste of a great variety of dishes, at least among the better classes. Still they are not by any means as hearty *eaters* as the Americans or English. Indeed, to a traveler with a keen appetite, or to one accustomed to the vigorous exploits of the English at the table, the Hungarians seem really abstemious. They make much more use of fruits, and salads, and curious puddings, and the light pure wines, than we of the Anglo Saxon race. Indeed a Hungarian would consider himself in danger of becoming a *sot*, if he should drink every day the strong *brandied* wines which every Englishman has on his table. The English in Hungary too say it is impossible in that clear, oxygenated climate, to keep up their habits of beef-eating and drinking.

The first meal among the Hungarians is taken at seven or eight in the morning, and consists only of a glass of coffee with rich milk, and some meager *cuttings* of cold toast broken up and eaten in the coffee.

This is the universal breakfast for all classes except the poorest Bauer. Between this and the dinner, at one or two, nothing is usually eaten or drank. The dinner, as I have said, is long, with a great variety of dishes, not essentially differing from our own, except that it is lighter, and a greater use is made of light wines. This meal is always followed by a cup of coffee. The only other meal is the supper, at eight o'clock in the evening—a long meal again, with soup, fish, pudding and wine. Tea is very little drank in the land: sugar, and sweetened articles, too, are seldom used.

What especial *theory* of diet to draw from all this, I am at a loss to determine. Still the facts may be useful to some who are investigating the matter. The principal things worthy of imitation, seem to be the moderation and sociability of the meals, and the distance of time at which they are separated—the last being, no doubt, very conducive to health. The principal cause of their vigorous health and well formed bodies must be found, without doubt in their open air pursuits and manly exercises, to which they are all ardently attached. They are a nation of herdsmen and farmers, and are enjoying the benefits of their pursuits.

No account of their habits would be complete without stating that the whole population, from the nobleman and clergyman down to the lowest Bauer on the Puszta, *smoke* incessantly from morning till night.

However, to return to our walk through the village. It was soon noised abroad that an *American* was in the village, and we found everywhere groups of curious gazers at the first man they had seen from the Western World. We called upon the judges of the village,—dignified, gray headed old peasants—and everywhere I heard allusions of thankfulness to the kindness of the Americans to the exiles. One man had a picture and a long account in Hungarian, of the reception of the first Hungarians in New-York. At last, in our rambles, we were overtaken by a large two-seated wicker wagon, with four horses, sent by the village authorities to conduct us around—in the town. Accordingly up we mounted with a "crack" Hungarian driver, in short embroidered jacket, and boots and spurs, on the box, and made the circuit of the town and neighborhood.

Everywhere that we visited, whether at his Majesty's officers, or in the houses of the common people, we heard the same account of burdensome taxation, of stupid legislation by the government. Not a man—even of those who received the Emperor's pay—seemed contented. They declared that the object of the ministry was to completely blot out the last traces of the old independence of Hungary. All their internal municipal constitution, so cheap, so efficient, which they had enjoyed for more than five hundred years, was utterly destroyed. They said the pettiest town officer was appointed by the government—and all the higher officers were either foreigners or such Hungarians as no one had ever respected. Then every possible means was used to squeeze money from them by taxation. They were taxed personally; taxed for their garden; taxed for their house; for the wine; for their tobacco. Every deed drawn up must be on taxed (stamped) paper. Their passports were taxed; their very *permits* to raise taxed tobacco, which they themselves are not

allowed to use, must pay a duty. Then, say they, this all comes at the worst of times, when we are stripped of our property by the war, and when the peasants, especially, have lost millions by the Kossuth notes, which the government, despite its promise, has never yet redeemed, at even a part of their value.

The result of it was, in this village, they all told me, that every man was limiting his liabilities in every possible way to being taxed. The amount of wine made there the next year, would be the least possible which they would want for themselves. In tobacco, from which the Government had expected the greatest revenue, knowing the universal habit of the people, the yield would be the smallest ever known. The law, in regard to the tobacco is so exacting, and the duty so heavy, that it will scarcely repay any farmer to sow the seed. In one district around that village, they said, where formerly were five hundred tobacco plantations, there are not now five! They have made too, a patriotic matter of it, as we did of our *tea-tax*, and the government will probably gain very little revenue from that duty. In the course of our ride a man joined us who was a farmer on the outskirts of the town. He spoke German, and I had a long conversation with him. Though a middle-aged man, with a family in merely comfortable circumstances, his great desire was, he told me privately, to get over to America, and he questioned me a great deal about the expenses, and the best situation for an emigrant, &c., &c. In the course of the conservation I had the curiosity to ask him why he had this plan? He was living comfortably here, and the taxes, though they were burdensome, would not ruin him. It would be a hard thing for him to begin life over again in a new land.

"Yes," he said, "I know it well—and it is like cutting the heart-strings, to break away from the old place here, and from Hungary. But I cannot live here a *slave*. It is not *Hungary* to me, if it is not free. As for the taxes, I could bear them, though they are heavy. But I can't see why, if I am steady and industrious, I should pay the debts of my neighbor when he is a spendthrift. Of course I know that every state must lay taxes to support itself, but why Hungary should pay Austria's six hundred million of debt, I don't see! I shall wait a while, to see if no change comes here, and then, if nothing occurs, old as I am, I will leave the country. My country must be where freedom is."

We rode about to the farms of a great many different persons, and everywhere at once, according to the Hungarian usage, the white and red wines were brought forth, with a flask of mineral water, which they all seem to drink with wine—a water with a strong smack of sulphur and iron. They appeared to consider it such a violation of hospitality if one did not drink that at first, I sipped a little at every house, but finally declined altogether, especially on the score that Americans did not drink wine. At each house, too, as we went away the people took my hand, and wished, almost solemnly, the Hungarian blessing, "*Isten aldjon meg!*" (May God bless you!)

At length, in the evening we stopped, by the urgent invitation of a *Bauer*, at his little house to take supper. I was informed that there were three other places where we were engaged to take supper beside, and that I might as well give myself up, and accordingly with a sense of resignation I followed the others in. The table was soon loaded, and though people were continually coming in and eating and going out, it seemed to make no difference—and dish after dish of good things were set out before us. First came a huge tureen of soup, with little balls floating in it of dough stuffed with hashed liver. Then a preparation of very diminutive chickens, stewed in red pepper. Then one of the genuine Hungarian puddings, of small bits of *batter*, worked and cut till they looked like fragments of leather—all soaked in fat. After this, chickens boiled with rice, and following it a formidable looking pyramid of cakes, such as in Yankee land we call "fritters," except that they were cut into singular shapes, and piled up in a towering mass on the platter. Besides, there figured roast mutton and salad, and veal cutlets, and divers other dishes—some, dishes unmentionable in English, and others with names which I have forgotten. Flasks of white and red wine were brought in every few minutes, and bottles of sulphur-water and iron-water, which the guests seemed to drink even more than the wine.

At the end, the Bauer and his wife handed every person a little tumbler with coffee. The talking was very animated at table, and mostly of America, and the chances for the Hungarians, if they should go there.

Several of the company were government officers, but the same expressions were used there, which one hears everywhere—of the stupidity and oppression of the government, and that the only hope for them was to emigrate to "the free land." At length one of the principal men rose for a toast. He spoke in Hungarian, with a rich, eloquent tone, and they all listened in the deepest silence. I only understood it in part, but as they translated it, it was, that my arrival in the unhappy land seemed ominous of good; that I was one from a nation who had welcomed the Hungarian exiles in their suffering, and had given sympathy to their poor country, and that he would propose the health of two of the statesmen of my country, whom every Hungarian knew, "WEBSTER, or (*Vebster* as they call him,) and FILLMORE!"

I was surprised enough at hearing such a toast in a little Hungarian village, though I found afterwards that very much was known indeed, there, of our country.

Towards the end of the supper, in a pause of the conversation, the wife of our host, a pretty looking, nut-brown peasant woman, came up to me, and kissing my hand, with a look that almost tempted me to kiss her, said something very

sweetly in Hungarian. They all lauged, and translated it for me. It was: "When you go back to your country over the waters, tell KOSSUTH that none of us will ever forget him—and say that the Hungarian peasant women sent him a God's blessing, and bade him come back soon and save his dear Hungarian Fatherland!"

It appears she believed Kossuth was in America, and it shows one instance, of what I everywhere noticed, the intense love of the peasantry for him, their benefactor and orator. After much lively conversation we broke up, too late, greatly to my relief, for the three other hospitable tables which were awaiting us—and I went to my friend's for the night, not a little interested in these, my first experiences of Hungarian country life. C. L.—*New-York Independent.*

Domestic Notices.

CHURCH IN THE ROMANESQUE STYLE.—[See FRONTISPIECE.]—Next to the Gothic style, the Romanesque (or Lombard,) appears better adapted than any other to religious edifices. Though there is, in its lines, less of religious aspiration than in the Gothic, yet it is also equally removed from the level plane of reason which we find in the Greek architecture. There is much, both of beauty and balance, in the curved lines of its arches, and it admits the spire almost as naturally as the Gothic style. Besides this, so far as association is worth anything, it has clearly the advantage of the Gothic style—since the earliest christian churches were all round arched, or Romanesque.

This engraving is a portrait of an Independent Chapel, at Boston, England, designed by Mr. STEPHEN LEWIS, and may afford some hints to the committee of some of our religious societies, looking about for ideas. It is different from most churches, in having a spacious basement room on the ground floor, sufficiently elevated to be abundantly lighted and ventilated—in short, as healthful and agreeable as a schoolhouse above ground. This school accommodates 400 boys and girls. The exterior length of the chapel is 62 feet, the width 37 feet 6 inches; the internal length 56 feet 8 inches, the width 32 feet; the hight of side walls from pavement, 31 feet; the height of gables 46 feet; the tower height, 62 feet; the spire and vane 48 feet—or total 110 feet.

This church is built wholly of brick—the mouldings of doors, windows, &c., of moulded brick. The cost was £1,300, (about $6,500.) As moulded brick are now admirably made in this country, (some fine buildings in this style having been erected with them at Providence, R. I.) this mode of building is worthy the attention of those who desire to unite economy with good effect.

THE MILDEST CLIMATE IN THE NORTHERN STATES.—A visit to Newport, Rhode-Island, this season, and a close examination of some of the grounds and gardens there, has convinced us that the popular estimation in which the climate of Newport is held, is based upon sound reasons, and is no popular prejudice. Though Newport is part of the sea-coast range of New-England, its climate is mild and agreeable, to a degree known nowhere else in any of the middle or eastern states. This has not been well explained, but it is probably owing to an elbow of the gulf stream which bends inwards at this point of our coast, and ameliorates the climate for some miles in its neighborhood.

As absolute proof of the mildness of the winters, we may state that in the garden of Mr. ALFRED SMITH, (the sylvan museum of the island,) we saw in the most flourishing condition, the Evergreen Cypresses of the south of Europe, the Gold Dust tree (*Aucuba japonica,*) the *Arbutus Unedo*, the Portugal Laurel, the English Laurel, and the Chili Pine, (*Araucaria.*) Not one of these plants will stand the winter *well* without any covering elsewhere, (so far as we know,) north of Baltimore. At Newport they appear to grow with the freshness and the depth of verdure, that marks them in England—the finest climate for evergreens; and to carry out the resemblance of Newport to the best parts of England, we may mention also, that the Isabella and Catawba grape scarcely ever ripen in Newport, there not being a sufficiency of hot sunny days there—while the lawns at Newport for the same reason, preserve a softness and depth of verdure which we have

seen nowhere out of Great Britain. In Mr. SMITH's garden we observed the Deodar Cedar, the Atlas Cedar, the Cryptomeria joponica, all the English Hollies, remarkably luxuriant, and showing none of the signs of having been pinched by winter, which all those, (except the Deodar) often do in our northern pleasure grounds. Many of the grounds surrounding the gentlemen's summer cottages, have been planted lately with quantities of Hollies, Austrian Pines, English Laurels, &c., and Mr. SMITH, who is perfectly conversant with all the gardening experiments of the island, informs us that 250,000 ornamental trees have, to his knowledge, been planted in private grounds in and about Newport, within the last six years. These have partly been procured from American nurseries, but great numbers of evergreens of small size, have been imported from England and France. In ten years more the naked shores of the island will, we hope, be as leafy and beautiful as those of the Isle of Wight—for while many trees that thrive well in the interior will not thrive upon the salt air of Newport—there are many, as we have here pointed out, which the mild and soft climate favors, that will not thrive so well in any other part of the country—for at the south—where the winter temperature is the same, the summers are too hot.

THE SAGE GRAPE—A HUMBUG.—SIR:—In ALLEN's work on the grape, p. 134, is a description of what he calls, the "Sage grape," which is so highly praised, I was induced to send to Mr. Sage for some plants. He sent me two, for which he charged me $2 each,—and cheap enough at that, if they had been what they were represented to be.

I planted them with care in a rich soil. They soon put out leaves, and immediately I began to suspect that they were nothing more than the common wild grape—so strongly did the leaves resemble those of the latter.

Not feeling inclined to nurse a doubtful quality of vine, I took the precaution a few days since to send to Mr. SAGE for a pound or two of the ripe grapes, in order to test the quality. I have received them, and now send a portion of them to you, that you may pass your judgment upon them. If you agree with me that it is a vile, common wild grape, so Foxy (I think that is the term) as nearly to close the throat after swallowing them, I think you will confer a favor on the readers of the Horticulturist (such as may be tempted to buy the plants by the puff contained in Mr. ALLEN's book,) by giving the grape its true character. Mr. Sage undoubtedly believes it to be a very superior grape, but I think (and you probably will agree with me,) that he is quite mistaken. Yours, very truly, HENRY SHELDON. *Tarrytown, N. Y., Oct.* 1851.

REMARKS.—The grapes which accompanied this letter from Mr. Sheldon, (one of our most experienced amateurs on the Hudson,) were most undeniably "Fox grapes"—the large light colored variety, as big and as indigestible as bullets. To swallow such a grape requires as much fortitude as would be necessary to take a box of pills at one gulp—and no man who has ever tasted a grape that is a grape would dream of cultivating a vine of this sort after tasting the fruit. Mr. SAGE should be "sat upon," as DICKENS says, not by the coroner, perhaps, but by a committee of the nearest Horticultural Society, and have Black Hamburghs administered to him every fifteen minutes till he awakens to a consciousness of the flavor and quality of a real table grape. ED.

THE COLOR OF FLOWERS.—Mr. Dowing:—There are some peculiarities belonging to blue flowers which I have not noticed to have been observed by others, or if observed, I do not recollect to have seen them published. Should you think the following remarks sufficiently interesting, they are at your service. One of those peculiar traits, is, that a large majority of our native plants bearing blue flowers, bloom either early in the spring months or late in the autumn or fall months. Let any one take the trouble to make out a list of the flowers as they begin to bloom in the months of March or April, as the locality north or south will require, and continue it through the summer and fall to November, he will be surprised at the large number of blue flowers in the spring and autumn months, and the small proportion, relative to other colors, during the summer. The true cause of this peculiarity I will not presume to give, but would suggest the inquiry, does the density of the atmosphere at these periods have any influence in producing this phenomena? Do blue flowers require, and consume more oxygen

than those of other colors? We see that whenever we bruise the petals or express the juice from the petals of red flowers, and expose it to the atmosphere, it changes to a blue color; is this change of color caused by the absorption of oxygen? If so, may not plants consume a greater quantity at the seasons above alluded to, than when in a more rarified state? Or does the intensity of the solar rays alone cause a redundancy of the brighter colored flowers during the summer months.

Another peculiarity is, that blue flowering plants in their native state, are much more frequently found growing in moist shaded situations, than in more exposed or sunny spots. There are several plants whose color can be changed from pale red to blue, by employing swamp mould, and keeping them in the shade, more especially among those that bloom early in the spring. By pursuing the hints thus thrown out by the Creator, can we not be led to try the experiment of producing blue flowers upon plants that now uniformly bear those of other colors. Probably they would require to be carried through several generations before their present habits would give way to this artificial treatment. I have very little doubt of success if the experiments were persevered in.

The peculiarities are so palpable and distinct, that if upon experiment the foregoing suggestions should be found to be true either in whole or part, by any person who may have more leisure than your humble servant to try them, I shall be amply repaid for the time employed in writing this fugitive article. J. Van Buren. *Clarksville, Geo., Oct.* 17, 1851.

Answers to Correspondents.

Protecting Roses and Carnations.—*M. Wood,* (Pittsburgh.) The hardier China roses, such as Bourbon, Noisettes, &c, will be sufficiently protected by bending down the tops and covering them with straw, cornstalks,—or what is much better, branches of evergreens. Cover Tea roses with a little mound of tan bark—and turn a box over the tan to keep the *wet* out. Carnations and picotees, if they have been left in the beds—may be carried through the winter by turning a flat box over the bed—so as to cover all the plants. Raise the box about an inch or two on the *north* side, by a stone under its edge, and stick down a guard of small sticks all along the open edge, close enough to keep out the mice, but not so close as to keep out the air. Do not touch or remove the box till the spring fairly opens. This is the simplest and best mode.

Insects in the Ground.—*Peter Wall.* If you will take the trouble to throw up the soil into ridges under your plum and apple trees—now—before winter—extending the operation as far as the roots go, you will, by the help of Jack Frost, destroy a large part of the curculios and other insects that have taken lodgings there for the winter.

Evergreens.—*B. P.,* (Cayuga.) If you can remove evergreens with balls of earth about the roots, winter is the very best time. If you have to loose the earth from the roots, then wait till the trees *begin to start* in the spring—for that is much the best time under the latter circumstances.

Tiger Flowers.—*Jas. Culver,* (Royalton.) Sow the seeds in a pot in February, if you have a green-house, or in March if you have a hot-bed. They will come up in a fortnight and flower the next year. There can be no doubt that beautiful hybrids may be raised between *Tigridia conchiflora* and *T. pavonia.* The roots of Tiger flowers are such tempting morsels to mice, that you must keep them buried in sand or shut up in a box, as well as out of the reach of frost, or you will lose them.

Tan-bark.—*W. Jones,* (New-York.) There is no better covering for beds or bulbs, (such as hyacinths, and tulips, Ranunculus, &c.,) tender herbaceous plants, &c., than tan laid over the top of the ground a couple of inches thick. A coat of this thickness should be laid over all strawberry beds in parts of the country where the winter frosts are severe upon them. And asparagus beds are much benefited by the same treatment.